



FRIDAY, APRIL 1, 1881.

Freight Discrimination and Reasonable Rates.

[From the twelfth annual report of the Massachusetts Railroad Commission.]

The subjects discussed above* have been more than once officially brought before the Board during the year. The case of *Butman vs. Boston & Albany Railroad Company* will be found fully reported in Appendix E,† and it was made the subject of legislative consideration. A few comments seem necessary for the better understanding of this case.

The well-known principles of the common law and of Massachusetts statutes, as stated above, were sufficient for deciding the questions before the Board; but the facts were complicated, and it was with difficulty that they were obtained. And the principles of the law, although stated with tiresome frequency, seem hardly to be believed by railroad managers. Many of them still seem to think that the only question affecting rates is what is on the whole best for the stockholders. They believe that they have a right to charge the shipper of freight just what pleases them, being only restrained by questions of prudence and railroad policy. It cannot too often be repeated that this is not law. Even without a statute the railroad company has a right to make only a reasonable charge, and is liable to an action if the charge is unreasonable. By the statute this law is reaffirmed, and the company is made liable to penal proceedings in addition to civil suits.

The same principle of the common law which requires reasonable rates would seem to forbid discrimination: for higher rates to one man than were charged to another in like case would be unreasonable. And whatever exceptions existed as to this rule, they have been removed by legislation; yet many railroad managers appear to be obtuse as to this law, and claim in words as well as in practice the right to make a different contract with each shipper, and to give secret preferences whenever they choose.

One question which was discussed under this petition was, whether it is necessary, in order to make out a case of discrimination, that a demand for the low rate should be made and refused; and the Board had no hesitation in answering that it was not necessary. To give a high rate to one man and a low rate to another in like circumstances is in itself a discrimination and an offense. This is evident (1) from the wording of the statute, which does not read that it shall be an offense to refuse equal terms, but enacts directly, "Every railroad corporation shall give to all persons and companies reasonable and equal terms, etc." (2) The reason of the law demands this; for, otherwise secret contracts with a rival might ruin the injured party before he knew the existence of such a contract. (3) The Board was glad to find its views confirmed by English decisions, and especially by the great authority of Lord Chief Justice Cockburn (now deceased). It has been held in the English courts, at that time charged with "working" the railroad laws, that the mere giving of a secret preference is of itself an offense; that it is unlawful to discriminate in rates in order to enable railway-borne coal to compete with sea-borne coal or to introduce a new kind of coal into a district, or to diminish the natural advantage which one dealer has over another by reason of local proximity, or to prevent the opening of another railroad, and the consequent loss of business to the defendant corporation, or to procure an engagement of a shipper to use the other lines of the company.

In all these cases the motive is a natural one; and the preference given would be regarded by many railroad managers as good railroad policy. But the decisions are that no motive will justify discrimination. The power has not been trusted to railroad companies; and the absolute right of each dealer to a reasonable rate, and a rate as favorable as any given, cannot be taken away for the advantage of any corporation.

It should, however, be stated that the decisions are not absolutely uniform, and especially that those of Chief Justice Erie somewhat conflict with the views of Lord Cockburn. But Chief Justice Cockburn is, beyond all comparison, a greater authority than Chief Justice Erie, whose most valuable opinion on this subject is probably that delivered in *Palmer v. London & Southwestern Railway Company*, that his decisions in these cases were not precedents to govern other cases.

Another reason for taking the views of the more liberal jurist as a guide is found in the fact that our law is more liberal and comprehensive than the English act, which only forbids "any undue or unreasonable preferences," while ours requires absolute equality of terms; and, still further, it seemed that quite as much protection should be given to the people in this state as was given by any English decision.

The findings of the board in the case referred to were somewhat misunderstood, and sometimes misstated. A leading journal in New York stated editorially that the Board had condemned the *Boston & Albany*, for giving Messrs. Cutler the benefit of the "arbitrary," by which they were enabled to sell meal to their customers for five cents less than they otherwise could; and the Commissioners were unable to procure the insertion of a denial of this statement.

The fact was, that the *Boston & Albany Railroad Company* was condemned, not for giving this privilege to one customer, but for not giving it to others. To deny this privilege, or to forbid the granting of it, would simply add to the price of meal and "feed" in a large portion of the state.

It is true that the state was called upon by interested parties to cut off such privileges, and that legislation was asked to forbid the grinding of grain in transit, or its storage on its way through the state, without the payment of a new rate for transportation. It was urged, that allowing grain to be ground in transit brought the cheap water-power at Wilbraham, at Fitchburg and elsewhere, into direct and injurious competition with the costly steam-power of Boston millers; and the Legislature was asked to protect the Boston grain-dealers against this disastrous rivalry.

But it was answered, the owner of cheap water-power has a right to put it to its best and freest use; and the people of the state have a right to the cheapness of food for themselves and for their domestic animals that results from this cheap power. The doctrine of "protection" has never been carried so far as to protect one section of a state against the natural advantages of another at the expense of a third section.

And it was further said—and this was the convincing argument—if grinding and storage in transit are forbidden in

*In the letter to the New York Chamber of Commerce, which we published Jan. 14, 1881.—EDITOR RAILROAD GAZETTE.

†*Railroad Gazette*, March 26, 1880.

Massachusetts, they are and will be permitted by her neighbors; and we shall only repel business from our own state to build it up at Nashua, at Putnam and at other points in the New England states. Wise legislation does not seek to make grain or meal dear, in order to increase the profits of dealers. It does forbid exclusive advantages to one party, enabling him to undersell his rivals. This the law now does; and this is all that can be asked. If one man or firm has energy and skill which enable him to avail himself of advantages open to all, he deserves not blame, but praise.

These views may seem too plain to need restatement. They are almost alphabetical in political economy; but they were matters of early discussion during the last winter, and the Legislature was urged to act in disregard of them.

The *Boston & Albany Railroad Company* at once acknowledged the correctness of the decision, and offered freely contracts like that of the Cutlers to all persons or firms in like circumstances.

Another proposition was to hinder storage or milling in transit, and to forbid the practice known as "absorption of arbitraries" for the benefit of shippers, unless such privileges were specially provided for in the original written contract for transportation. But this seemed open to the objection, that in all cases any dealer favored by the corporation would be sure to have the privilege, while others might be deprived of it, and thus a certain discrimination would be legalized. For this, or for some other reasons, the proposition failed to become a law.

The *Hanover Branch Railroad Company* was complained of, and found to have been guilty of discrimination in favor of a firm of which its President and Treasurer were members. The case is fully reported in Appendix E.

In this case, after the original order for discrimination had been exposed, the directors voted to fix a uniform rate for shipments of fifty tons, with a rebate for shippers who received five hundred tons in a year.

The illegality of the original order was too clear for discussion; but upon this vote a question arose which had not been decided in any adjudication of the Board. The corporation claims the right to make a discriminating rate in favor of a customer, founded upon the large amount of business done by him in a year.

The principle that a lower rate may be given for a car-load than for a partially loaded car, and a lower rate for a cargo, or large quantity hauled at one time, than for one car-load, had been recognized by the Board, as it has been by the courts. It is founded in reason, and depends upon the fact that a large amount can be profitably handled at one time for a less rate than a small amount. But this principle does not apply to like amounts hauled at different times, but hauled more frequently for one customer than another. To prefer the larger dealer in this case, is to create a new and unnatural inequality in favor of the richer man or firm. It is to do just what the law seeks to avoid. It is to aid that tendency to monopoly, and to the concentration of business in a few hands, which is a marked evil of the times.

While the Board is confident of the law in this case, it is pleasant to have this view confirmed as being good railroad policy as well. Mr. Fink speaks as follows on this point: "If the railroad grants to the larger establishment lower rates of transportation, it would unjustly discriminate against parties with limited means, and be of no benefit to the railroad carrier. A common carrier should adhere to the rule to charge the same rate for transportation for the same articles between the same points, only discriminating on account of quantity as far as it influences the cost of transportation." (Nimmo's First Annual Report, p. 9 appendix.) And again he says, "I do not think that a common carrier has the legal right to enter into special contract with manufacturing establishments to carry freight at less rate than for the public generally, for the purpose of encouraging the erection of such establishments on the line of its road. It is not the province of railroad companies to make themselves partners in private enterprises. Even if they have the legal right, it is questionable whether it would be good policy for them to do so."

The present case is an illustration of the soundness of these views; for a prosperous manufacturing concern, employing many hands, was almost driven out of the town of Hanover by the preference given to the favored firm. And the Board learns, from statements made since the hearing, that Mr. Clapp would have wholly withdrawn if he had not found redress. Probably his sole motive would not have been the pecuniary loss, but he would have been more influenced by a sense of wrong. And this is not an exceptional case in that respect.

Comment was made at the hearing upon the fact that the railroad was a small one; but the Board knows of no legal discrimination that can be made on this account, and applied the same rule to this branch road that had just been applied to the most powerful corporation in the state.

REASONABLE RATES.

The *Otis Company et al. vs. Boston & Albany Railroad Company* was a petition for a recommendation of reasonable rates for coal transportation. The full opinion of the Board will be found in Appendix E. In brief, the decision was (1) that in view of the less cost of carrying large quantities at one time, and of the universal practice in that respect, it is reasonable to adopt a tariff of cargo or large quantity rates lower than single car-load rates, and that it is unreasonable to charge for cargoes or large quantities the same rate that is charged for single car-loads. (2) That rates which are reasonable in themselves, and admitted to be reasonable for the body of the community, cannot be lawfully set aside for higher rates whenever a monopoly of railroad service exempts any particular line from competition. (3) That a corporation is not justified in refusing rates reasonable in themselves, from the fear that the giving of such rates will divert business from other parts of their road to a rival road. On this last point the English cases are very decided.

THE CARRIAGE OF MILK.

The milk-producers have always claimed that they not only have the rights of all shippers to reasonable rates, but that they have a peculiar claim in equity; for not only has their property been taken without their consent, as the property of others has been taken, but it has, as they say, been made less valuable because the products of the West have been brought here in great quantities and at low prices, so that the prosperity of other classes has impoverished the agricultural class. The result is, that they cannot live unless they can freely dispose of the more perishable products of their lands which find a market in large places, and which will not bear long transportation. Among the chief of these products is milk.

Without arguing the special claims of the farmers to consideration, and recognizing the fact that recent developments in agriculture may affect the strength of those claims, they have certainly the right to fair terms, and the right to transportation with reasonable facilities without the intervention of any contractor or middleman. And the fact that it is easier for a corporation to deal with one man than with several is no excuse for a railroad company that seeks to avoid its obligations as a common carrier, and throws obstacles in the way of those who demand a performance of its duties. The Milk Act of 1879, chap. 208, recognizes the difficulties which

arise upon roads where milk is carried under contract, and gives this Board the power in certain cases to revise the rates fixed for the general public. The informal and unofficial intervention of the Board has been sought in a few cases, but only one has proceeded to formal adjudication. This case was that of *Elisha D. Stone et al. vs. Worcester & Nashua Railroad Company*, and it is reported in Appendix E.

In this case the corporation, after adopting for a few weeks the rates fixed by the Board, not being satisfied therewith, refused to submit to them further, and still refuses to carry milk at the rate fixed by the Commissioners. The legal remedy in this case is sought, not by prosecution, but by a civil action of tort by each person in each case. The Board learns that suits have been brought; and it is said that the defense is, that the railroad, being a branch line in relation to Boston, is not subject to the law so far as transportation to Boston is concerned. In other words, as the *Worcester & Nashua Railroad* does not run to Boston, this Board cannot fix a rate from the towns on its track to Boston. The Board has not supposed this defense to be available, because the company has held itself out as a common carrier from each town on its route to Boston; because it contracts to carry all sorts of merchandise from those towns, and especially has fixed a milk tariff from each place to Boston; and because, by means of its contracts with another road, and by force of the statutes, it is enabled to carry out these contracts.

If, however, the defense should be sustained, it would seem desirable to repeal or to amend the act. Otherwise, Massachusetts would have a law upon its statute book which could be enforced against all main lines, while it could be nullified by all branch roads.

The Fallacies of the Anti-Monopoly League.

We print elsewhere a communication recently received by us from Mr. F. B. Thurber, on behalf of the Anti-Monopoly League of this city. In it he remonstrates with us in regard to the strictures in the *Nation* of March 10 on Judge Black's great statistical effort in his recent speech in this city. So far as Judge Black's figures are concerned, we do not propose to say anything further about them: they speak for themselves. Mr. Thurber makes a good-natured effort to justify and excuse them, but he fails to mend the matter. When a reform association, undertaking to deal with an essentially economical question and addressing itself to the country through eminent public men like Secretary Windom and Judge Black, puts forth such deceptive and transparent fallacies as the Secretary's "\$45,000,000 a year on grain alone," or the Judge's "\$875,000,000 annual extortion on through freights alone"—when, we say, anything calling itself a reform association puts forth such shallow statements as these, its representatives must not complain if they are told they discredit themselves and their cause. Mr. Thurber shows some disposition to abandon Judge Black, as a statistical and economical authority, to his fate, and to fall back on his "knowledge of constitutional law." It will be well for him to do so. Judge Black's appearance hitherto in the discussion of the railroad problem has been very little to his credit. He seems to have accepted a brief from Mr. Thurber, and to have derived his whole knowledge of the facts and principles involved from a somewhat hasty reading of that brief. He has thus far contributed absolutely nothing of value to the discussion. His November letter to the League was a mere restatement of the results arrived at through the Granger litigation; but so great was his want of knowledge of the subject that he seems absolutely to have thought that what he was saying was new. Accordingly, he said it in a way which led many people, who had not followed the discussion, likewise to think it was new. His second appearance was the recent economical one, and of the copious display of ignorance—what he himself would, perhaps, more gently describe as "fractional inaccuracy"—then made by him, the less said in any serious discussion the better. It is merely to be hoped that, if Judge Black proposes to retain his brief, he will, in future, familiarize himself a little with the literature and principles of his case, and not again discredit, as he recently did, it, himself, and his clients.

Leaving, however, the now famous Black and Windom statistics, we have a few words to say on the present position of the Anti-Monopoly League. Mr. Thurber endeavors in his letter to state that position. He is disposed to concede to the railroads "a fair rate of profit based upon the cost of service," which in this state was fixed at "10 per cent. net upon the capital actually invested." The rest of the advantage accruing from "steam highways" should, he argues, inure to the public. Having thus stated his position, Mr. Thurber, regardless of the unhappy fate of Messrs. Black and Windom, proceeds to indulge in some Anti-Monopoly League statistics of his own. By them he shows, to his own satisfaction, that Mr. Vanderbilt has extorted \$75,000,000 (the League never deals in anything less than \$45,000,000) from the country during the last twelve years, through the agency of the New York Central alone. His figures in this case are as fallacious and deceptive as those of Judge Black. They could as easily be shown to be so. However, we have not space to follow him into them. It is with his general position we now have to deal.

The statement of a fair rate of profit in railroad investments, based upon actual cost of road and service, sounds well. What does it mean? Like everything which emanates from the League, it is vague and indistinct. It shows that the subject has not been thought of. We are talking now of the railroad service of the country. The charge is that, as a whole, it is one vast system of extortion and excessive profit; that it extracts from the country, in excess of the reasonable return it ought to be content with, \$45,000,000 a year on one article it carries, and \$875,000,000 on a single branch of its business. What are the facts? Unfortunately, in this country we have no body of reliable railroad statistics. In the manufacture of what pass for statistics the League has it all its own way. We have no means of ascertaining what the actual cost of the railroad system, as a whole, has been. We can only approximate it. If we cite state returns, the cry of "watered stock" is at once raised; the construction account has been swelled, it is insisted, by the issue of fictitious securities. Then we are at once pushed off again into the hundreds of millions. Fortunately the League itself has pointed out one little oasis of fact in this vast desert of figments. In the report to the Board of Trade, drawn up by Mr. Thurber as chairman of the Committee on Railroads, and submitted on Jan. 12, 1881, he states that in Massachusetts stock-watering is an indictable offense; that law and public opinion are against it; and, consequently, it is fair to infer that the statistics of Massachusetts as to the actual cost of railroads may be relied on. To the Massachusetts statistics, therefore, we appeal. Last year the average cost of an equipped railroad in that state was \$63,000 per mile. We cannot assume this as the average cost per mile throughout the country for two reasons: in the first place, it would not be fair, as the cost in Massachusetts is above the average; and in the second place, the average in unwatered Massachusetts far exceeds the watered average reported elsewhere. In the United States as a whole, Poor in his "Manual" for 1880 states the average cost at \$52,000 per mile. Let us suppose that one-third of this is fictitious—an enormous allowance for "water";

this would make the average actual cost per mile \$35,000—just 55 per cent. of the arid Massachusetts cost. Certainly, taking all the great lines of the country, with their enormous equipment and costly terminal facilities, into the account, no one at all familiar with the subject will find fault with this estimate on the ground that it is too large. There is no room for "water" in it. Poor also returns the mileage of the country at 85,000 miles. The rest is a simple matter of arithmetical calculation; not supposed to be, as Judge Black would say, "fractionally accurate." The railroad system of the country, as a whole, on this basis, after allowing for "water" the absurdly enormous sum of fifteen hundred millions of dollars—on this reduced, hard-pan basis the railroad system represents, at least, three thousand millions of actual cost—about \$250,000,000 more than the highest point of the national debt left us by the rebellion. The entire gross earnings of the system are \$530,000,000, and its net earnings above expenses of operating are \$220,000,000. The entire net earnings, therefore, represent but 7 per cent. on actual cost thus ascertained. If every dollar of them went annually to the owners of the property it would not, accordingly, be an excessive profit. Every dollar does not go to them, however, as on well-managed roads a large portion of the net earnings is put into the property. Poor returns the amount actually paid out in 1879 as profit on investment at \$173,000,000—being a trifle less than 6 per cent. on our desiccated estimate of actual cost. In Massachusetts during the last eight years the total net income has averaged less than 6 per cent. on the investment. Does the Anti-Monopoly League maintain that this return is excessive?

We are, however, well aware that the League and its advocates will at once reject any and all such methods of computing a reasonable profit. They mass the system only for the purpose of showing extortion by the hundreds of millions. When it comes to averaging its costs and its earnings, they deftly shift their ground. They contemptuously refuse to look at it as a whole. Each road, they insist, shall stand on its own merits. In railroad enterprises, they argue, there should be no prizes; all above a fair profit on the capital actually invested in each enterprise should inure to the public. When losses occur—that is the affair of the investors. There must, however, be no averaging here. In the eyes of the League, therefore, the building of railroads is a business absolutely *sui generis*, and those who build them are fools. That the business is a most risky and uncertain one the League itself does not deny. Yet they insist that those who embark in this risky business should never expect more than a fair profit on any single investment, even the best; and on all the bad investments they should accept the loss as a necessary incident. This position the League calmly takes.

Well, we wish to be reasonable, and so we will accept this position also. It is absurd, and in violation of every business principle; still, for argument's sake, we will accept it. Space, therefore, is to be thrown out of consideration. How is it about time? There are good years and there are bad years in the lives of railroads, as of men. Is this reasonable profit—10 per cent. in New York—accumulative? There are actually no railroads which have always been profitable. Very few pay 10 per cent. dividends ever. None have always paid them. Are railroad investors entitled to arrears of unpaid profits? If they cannot average their losses over space and the entire system, may they over time in the case of the individual road? We commend this problem to Mr. Thurber in the case of the New York Central, on a basis of 10 per cent. annual profit. The result, we fancy, will astonish him.

This averaging through time, however, the League cannot allow either. If they did, they would be lost. Their only tenable position is a plain one. Investments in railroads, they must say, are unlike any other investment known to men. The profit allowed to them is to be computed on the business of each particular enterprise for each particular year. In no case must it be more than a fair profit on actual cost. There must be no averaging, no accumulation of arrears, no compounding. That is "water." Well, yes, we agree; it is "water"; as the League is trying to inculcate the idea of "water" into the public mind. But, if the League will point out to us one single business ever carried on by private enterprise in any country, not as a matter of charity, where there was neither a guaranty of a moderate profit on the one side, nor a chance to offset good years by bad years, or heavy losses by unusual profits, on the other—when it points out to us one single such case, then, and not until then, will we acknowledge that in their present attitude on this subject they have some basis of reason or precedent to stand on.

They cannot do it. The subject, however, is a large one. We have hardly entered upon it, and must hereafter recur to it. We have yet something to say on the fruitful theme of discrimination.—*The Nation*, March 24.

Increase of Business on Massachusetts Railroads.

[From the twelfth annual report of the Massachusetts Railroad Commission.]

The great increase of business represents the share which the railroads of this state have had in the general business activity and prosperity of the country. Here, as elsewhere, most of the railroad companies were found unprepared for the enormous volume of business which was precipitated upon them as a result of the full harvests of the West, and of the dearth in Europe. They were found wanting in locomotive power, in the number of freight cars, and sometimes in experienced train-hands. Nor could these wants be at once supplied.

INADEQUATE ROLLING STOCK.

As one consequence of this want, it is charged that Western cars entering New England have been detained here for local use, and sometimes returned by other and longer routes than those by which they entered the Eastern states. This has been a source of annoyance to railroad managers, and an injury to the business of this section. The managers of one great railroad complain that 642 of their cars were at one period detained east of New York for an average of eighteen or nineteen days, when six or seven days would have been sufficient if they had not been held for local use, or needlessly delayed.

The number of freight cars owned by Massachusetts railroad companies is returned as 21,886. The number of freight cars so owned, which were in the state on Dec. 1, was 11,315. The number of foreign freight cars in the state on that day was 12,992; and there is no reason to suppose that this day was not a fair specimen. These figures show that the extent of the practice complained of has been exaggerated. But it does exist.

A railroad manager writes to us as follows. "The question of prompt car movement is a very serious one to all railroads west of New York at the present time, as we all have more business than we can find cars for; and, if there is any similar demand for trade to New England points, it is equally important to the lines east of that to have prompt movement, as it is a question of cars entirely at the present time. The interchange of cars is now so general all over the country that it is scarcely necessary for me to say to you that their prompt movement is important to every road over whose line they run. This not only affects the railroads, but affects largely the business interests of their sections."

He also sends the history of two cars on their absence at the East, with their circuitous excursions, and daily trips forward and back between way stations, which would be amusing if it were not an example of what is a serious injury to our business and name. "The wheel in constant motion" is the requisite of railroad prosperity; but it must be in motion for those that own it. The amount paid for car service by no means compensates foreign roads for this sort of detention; and corporations that are satisfied with such payment for the legitimate use of their cars, are not willing to have them impressed into local use. The Railway Clearing-House Association has taken measures to check this abuse.

Many complaints have been made as to delays at the Hoosac Tunnel and at the yard in North Adams. One cause of the detentions complained of has already been alluded to—the want of rolling stock and train-hands on the part of operating roads. Another cause has been the anomalous legal condition of the state road as to its connection with other roads. This evil has been in part removed by agreements made by those roads with the advice and concurrence of the Commissioners; but it has been removed only in part, and may call for legislation before a complete remedy is found.

TERMINAL FACILITIES.

The great want, however, in the general railroad business has been terminal facilities for handling freight. Three questions were put by the board to a railroad manager on a day in February last: (1) How many loaded cars have you now waiting to be discharged? The answer was, "Five hundred." (2) How many have you had any day this season? And the answer was, "One thousand." (3) How many cars can you handle in a day? And he said, "At the wharf we can handle sixty; but with lighters we can manage sixty more." An easy computation shows how commerce was hindered by the defective terminals of this road. Another railroad had on that day one thousand loaded cars waiting on its tracks. In the heart of Middlesex County these cars could be seen standing on sidings, when they ought to have been at the wharf, or rather when they ought to have returned from the wharf, and to have reached the West in order to take a new freight for European consumers. And this detention of cars leads to detention of vessels; and neither cars nor vessels can enrich their owners unless they are always moving. Or, if demurrage does enrich the ship-owner, it impoverishes the merchant, and gives a bad name to the port. During the year, many vessels, for want of proper facilities, have been unloaded "in the stream" by lighters (three are so unloading at this writing) with a double handling of freight; others have been discharged at one place and loaded at another, with consequent delay and expense; and still others, after discharging their cargo at Boston, have been obliged to go to New York for return cargo.

There have always been two classes of opinion upon the subject of storing and handling freight. One class of men has said, "Bring business here, and facilities will follow." Others have said, "Furnish the facilities, and business will come." This seems to be the wiser course: for business will not come unless facilities are furnished in advance for transacting it; and again, when business comes, facilities cannot be furnished in a day, nor in a year. And, therefore, it is wise to provide accommodation for business far in advance of present needs.

We need not repeat facts that have been often presented in different forms as to the amount of terminals convenient for commerce in Boston and in other seaboard cities. Boston has suffered in past times for the want of more extended facilities of this kind. The board is warranted in saying that several additional and permanent lines of foreign steamers would now be established at the port of Boston, if full terminal facilities had been furnished there one year ago. And there is not a piece of real estate in the city which would not have been increased in value by such an enlargement of foreign trade. And what is true of the city is, to some extent, true of the whole state. It is certain that, to keep her place as the second importing city of the country, Boston must increase her terminals. For where vessels come to get outward freights, thither they will at last bring inward freights.

Our friendly rivals are nearer the West; but we are nearer Europe. And the controlling fact in competing for business will be the cheapness and promptness with which freight can be handled. The French saying is, "The tools belong to him who can handle them;" and it applies especially to freight.

While there is cause to regret the shortcomings of some of our roads and their dilatoriness in providing for coming business, there is much to be said on the other side. The board would, perhaps, have hesitated to record their criticism on this subject, if it were not able to add that much has been done and more is about to be done to answer such criticism.

The facilities at Boston for discharging and distributing imported goods are unrivalled, except at New York; and our merchants who recently visited Philadelphia and Baltimore, envying their "terminals," came home well satisfied with the nearer and better accommodations of their own city for importing and distributing goods.

Great improvements have been made, and further improvements are contemplated. Those which have been made, and which are now going on, are set forth in Appendix D. The Boston & Albany Railroad Company as usual takes the lead in this class of improvements actually accomplished. The Fitchburg is now providing greatly extended facilities. The New York & New England and other roads have greatly increased their freight accommodations. The Boston & Lowell had already provided excellent terminals.

The tables in Appendix A show the receipts of grain in Boston for ten years, and the receipts for the same period at the chief seaports. The exports of the principal agricultural products of the country from Boston are once more furnished by the courtesy of the Collector of the port.

The comparative amounts of some of these articles exported in 1870 and 1880 are as follows:

| | 1870. | 1880. |
|--------------------------|-----------|-------------|
| Barley, bush..... | 30 | 23,778 |
| Corn, bush..... | 6,607 | 8,412,913 |
| Meal, bbls..... | 14,346 | 135,941 |
| Wheat, bush..... | *81,914 | 3,678,479 |
| Flour, bbls..... | 176,964 | 1,102,368 |
| Live animals, head..... | 95,755 | 95,755 |
| Bacon and hams, lbs..... | 1,732,107 | 134,395,775 |
| Salted beef, lbs..... | 1,348,671 | 4,034,588 |
| Fresh beef, lbs..... | 128,801 | 13,008,537 |
| Butter, lbs..... | 40,152 | 6,715,096 |
| Cheese, lbs..... | 766,894 | 4,335,502 |
| Lard, lbs..... | 2,807,297 | 47,997,462 |
| Pork, lbs..... | | 26,233,357 |

* In 1871; none in 1870.

† In the report this is erroneously printed 3,678,479, or the same as the number of bushels of wheat exported.

The tables (also in Appendix A) giving the tonnage of vessels entered from foreign ports during 1878, 1879 and 1880, show that Boston has, during the last financial year, increased her entered tonnage by 18.5 per cent.; Philadelphia, 5.7 per cent.; Baltimore, 9 per cent.; and New York, 14 per

cent. In 1879 the increase over 1878 was as follows: In New York, 20.14 per cent.; in Baltimore, 44.55 per cent.; in Philadelphia, 54.23 per cent., and in Boston, 21.27 per cent.

The export trade of Boston is no longer a subject of doubt among our own people, or of derision abroad. During the last year 434 steamers from foreign ports entered the port of Boston; and, while the Board is preparing this report, twenty first-class ocean steamers (not including those engaged in coastwise trade) are lying in the harbor. This is a gratifying fact when it is remembered, that, ten years ago, no steamers sailed from Boston direct for any European port. And, if our railroad companies use to the utmost the opportunities which are afforded them, Boston has only begun to see the prosperity of this branch of commerce. It is literally true that our export trade is only limited by the facilities offered for it. Just so far as we extend our facilities will this trade increase.

It is still matter of regret that some mode has not been found by which the magnificent water-front and broad territory of the South Boston Flats may be completely utilized, and more nearly connected with the Hoosac Tunnel. No jarring of private interests or private feeling ought to be allowed to hinder a junction in which every citizen of the Commonwealth has a direct interest.

Judge Black and the Railroads.

To see a man scientifically skinned is usually an interesting spectacle. Judge Black, the principal orator of the so-called Anti-Monopoly meeting held at Cooper Institute in February, has undergone a skinning, and cannot complain that it was unscientific. Mr. Fink, Commissioner of the trunk line pool, has performed the operation, and with such effect that it is difficult to see how any man having the faintest trace of self-respect can again trust himself before the public in discussion of a subject upon which he has been proved to be either as ignorant or as mendacious as Judge Black is shown to be by his critic. It was claimed by this champion of anti-monopoly that the total robbery by the railroads is \$675,000,000 per annum. In view of the fact that the gross receipts of all the railroads in the country from all sources of revenue, as shown by the official reports quoted in Poor's Manual, have never reached \$800,000,000 in any year. Judge Black's impudence or ignorance must be recognized as almost sublime. He arrives at this stupendously false assertion, first, by assuming that all the grain produced in this country was moved by rail only, and all the way from Chicago to New York, and through the whole year 1880, at a rate which was in force during the winter months only, 35 cents per 100 pounds. Estimating the grain at 75,000,000 tons, and all the freight transported at three times as much, or 225,000,000 tons, this Munchausen of anti-monopoly next assumes that the railroads can carry freight with profit at 20 cents per 100 pounds from Chicago to New York, and that the remaining 15 cents is robbery.

Mr. Fink makes public for the first time some very important facts. From the official returns in the office of the Commissioner, he ascertains that the entire amount of freight transported during the year 1880, with its unprecedented traffic, from all points of the West to all points east of the western termini of the trunk lines, was only 11,500,000 tons. As everybody knows, only a part of this was moved the whole distance from Chicago to New York. But had it all been so moved, and all at the highest winter rate of 35 cents per 100 pounds, or \$7 per ton, the entire charge would have been only \$80,500,000. In reality, Mr. Fink states, the additional charge of 5 cents in winter, against which Judge Black rages, applied only to 8,500,000 tons, and the added charge for the four months was only \$2,800,000.

Mr. Fink then ventilates the assertion that freight can be carried at a profit for 20 cents from Chicago to New York. He shows that the average cost on the New York Central and Lake Shore was about 27½ cents, including general expenses but not interest; that the whole cost, interest included, was about 33 cents; and that the actual charge in 1880 for transportation of grain averaged only 32½ cents. Yet Judge Black asserted that the actual cost, exclusive of interest on capital, was only 15 cents from Chicago to New York. Had the New York Central carried all its freight last year at that rate per ton per mile, its freight earnings would have been \$5,548,568 less than its freight expenses. The same rate on the Lake Shore would have left that company, after paying rentals, less than one-tenth of the interest on its bonded debt, and nothing for its stock. In many other respects Judge Black's statements were exceedingly wild, as Mr. Fink conclusively shows.

Judge Black is the type of a class. His well-known ability and his large influence in the councils of a great political party give him prominence among those who have been seeking popularity by clamoring against corporations; and yet that ability, great as it is, has not made him careful to state the truth. Where he errs or draws upon his imagination, thousands of speakers and writers do so still more, and very few of them are as blameworthy as he, because very few have his opportunity to ascertain the facts. Wild as his statements are, they will be quoted and honestly believed by thousands of men all over the land. They are only samples of similar unfounded and recklessly inaccurate assertions which are heard every day from men who ought to know better. Yet it is gravely proposed to get up a prolonged agitation, and to rouse the people to the adoption of extreme and dangerous measures, on the basis of such assertions. Until the so-called anti-monopolists can acquaint themselves with facts, and contrive to rest their arguments, at least in part, upon a correct knowledge of the business to be treated, they will get little attention from conservative and thoughtful men.—*New York Tribune*, March 30.

Running on Time.

It is noted as a remarkable fact that the first train through over the Southern Pacific road and the Atchison, Topeka & Santa Fe reached Kansas City exactly on time. For a train running so long a distance and over so much new road this was an unusual achievement.

Train-Women.

An exchange says: "We understand that a committee of the Sorosis have interviewed Mr. Vanderbilt and other railroad magnates, with a view to having railroad employments open to women. It is said that the committee urge with much force the well-known fact that women are expert in handling switches. Numbers of them can manage a train beautifully, and they all fire-up very easily, while a large class are very apt at the brake. It is intimated that Judge Black adopts the views of the committee with characteristic impetuosity, but that Commissioner Fink has expressed an opinion that the Judge's views are not based upon a thorough study of the subject."

A railroad engineer saying that the usual life of a locomotive was only thirty years, a passenger remarked that such a tough-looking thing ought to live longer than that. "Well," responded the engineer, "perhaps it would if it didn't smoke so much."

Rendle's System of Glazing Roofs.

The engravings herewith represent the method of constructing this system of glazing for roofs, which is extensively used in England. The glass is held by metal plates, which are bent into an S shape, so as to form a groove, which receives the glass, as shown in the sectional view on the left side of fig. 1. These plates are screwed fast to the purlins and have lips turned up as shown in fig. 1, against which the lower edge of the glass rests. Holes, also shown in fig. 1, are cut in these lips, so as to allow the water to drain out of the grooves. The edges of the glass, where the sides of the plates join, are lapped over each other, and it will be seen, from the shape of the grooves in the metal plates, that if any water should drive under the laps that it would run down into the grooves and escape through the holes.

The glass moves freely in the metal grooves, and if neces-

Cincinnati & Indianapolis road was shipped from Grant's today.

The first of the order for 30 locomotives for the Louisville & Nashville road was shipped from the Rogers' Works yesterday afternoon. The tender is of monster size, and looks as if it would hold the contents of an ordinary coal yard and a good-sized reservoir.

H. K. Porter & Co., at Pittsburgh, have their shops full of work on orders.

Negotiations are reported to be pending for the lease of the extension shops at Bordentown, N. J., to a company which will use them for the manufacture of locomotives. These shops were formerly the chief repair shops of the Camden & Amboy road, but have not been in use for several years.

The Brooks Locomotive Works, at Dunkirk, N. Y., are running over-time on orders.

The Hinkley Locomotive Co., in Boston, has a number of orders to fill.

Car Notes.

The Industrial Works at Bay City, Mich., builders of Dill's

however, will be of great size and strength, extending about 52 feet above high water mark, the same as the Panhandle railroad bridge. The approaches to the channel piers from either bank will be built in the usual style of ordinary truss bridges, but that part between the three channel piers will be quite different in plan. Towers 25 feet in height will be erected on each pier, and support a system of links and stays similar to that of the Point bridge. The intention is to have the supports of this portion of the structure above the roadway, in order to allow a free passage for high craft on the river. The channel spans will be each 360 feet in length, and the approaches will consist of plate girder spans. The abutment walls will be built of Homewood stone, with rockface finish and cut stone coping. The bridge will be for foot and wagon travel only, having no arrangement for railway traffic. The Iron City Bridge Co., which held a contract for \$264,000, under the old management, claim \$80,000 damages. It is expected that the matter will be amicably arranged.

The Corrugated Metal Co., at East Berlin, Conn., has lately taken contracts for a highway bridge at Washington, Conn.; one at Norwalk, Conn., and two at Buckfield, Maine.

H. S. Hopkins & Co., of St. Louis, are building three combination truss spans, 160 ft., 90 ft. and 60 ft., for a new St. Louis suburban road; two spans, 150 ft. and 80 ft., on the Texas & St. Louis, and five Howe truss spans, 150 ft. each, for the Louisville, New Albany & St. Louis. They are also building foundations for two elevators in St. Louis.

The government contract for a new iron light-house at Lewes, Del., has been awarded to the Phoenix Iron Co., at Phoenixville, Pa. The tower will be 100 ft. high and will contain about 200,000 lbs. of iron. It is similar in design to one built by the same company last year on the Delaware.

Iron and Manufacturing Notes.

The Shenango Iron Works, at New Castle, Pa., are to be leased to Oliver Brothers & Phillips, of Pittsburgh, who will start up both the rolling mill and the blast furnace.

The St. Louis Wood Preserving Co. has a daily capacity for treating 1,200 ties or 40,000 ft. of lumber, and has now orders on hand for about four months' work. It is now treating lumber for the St. Louis Bridge roadway.

The new elevator C, now being constructed at Locust Point, Baltimore, by the Baltimore & Ohio road, will contain 33 Fairbanks hopper scales, having each a capacity of 21 tons, while the new Baltimore stock yards at Claremont will have one railroad track scale of 40 tons capacity and four stock scales of 30 tons capacity each. The large new elevator being built by Thomas Clark, at Buffalo, will have four track scales of 50 tons capacity each, six hopper scales of 400 bushels capacity, three of 300 and one of 100 bushels.

The contract for the iron work of the new government powder magazine among the hills of Morris County, N. J., has been let to the Passaic Rolling Mill Co., of Paterson.

The new works of the Pittsburgh Bessemer Steel Co., at Homestead, Pa., were started up last week. The new machinery worked very satisfactorily.

The Longdale Iron Co., at Longdale, Va., put its new furnace—Lucy-Selina No. 2—in blast Feb. 11 last. It has worked well and is now making 33 tons of pig iron a day, with coke for fuel.

The Riverside Rolling Mill, near Cincinnati, has been sold to E. L. Harper, and will probably be run in connection with Swift's Iron and Steel Works.

The Rail Market.

Steel rails are unsettled, and \$62.50 to \$64 per ton at mill are current quotations. Some transactions in English rails are reported at \$61 to \$65, according to port of delivery.

Iron rails are steady, with a good deal of business reported at \$46 to \$48 for heavy rails and \$49 to \$52 for light sections.

Old iron rails are lower, with light sales at \$27 to \$29 per ton in Philadelphia, according to quality.

Spikes are lower, say \$2.60 per 100 lbs.; fish-plates, \$2.40; track bolts, \$2.25 to \$3, according to specification.

Compressed Air Motors.

The Rochester & Brighton Railroad Company is about to try compressed air motors on its street railroad in Rochester, N. Y. If the experiment proves successful, the company intends to substitute these motors for horse power altogether. There are now 245 horses employed on the road.

British Rail Exports.

For the month of February and the three months ending with February the exports of steel and iron rails from Great Britain have been, in tons:

| To United States: | February | | Two months— | |
|-------------------|----------|--------|-------------|--------|
| | 1881. | 1880. | 1881. | 1880. |
| Iron rails | 10,419 | 6,608 | 10,082 | 14,549 |
| Steel rails | 4,380 | 6,102 | 6,085 | 13,512 |
| Total | 14,799 | 12,710 | 22,167 | 28,061 |

For February there is an increase of 57½ and for the two months an increase of 15.4 per cent. in the exports of iron rails to the United States, but there was a decrease in the exports of steel of 28.9 per cent. in February and 55 per cent. in the two months. The February exports of both kinds to the United States were a little smaller than the January exports in 1880, but twice as large this year. The total imports this year were enough for 83 miles of track of 56 lbs. rails in January, and for 168 in February. The exports to all countries were:

| | February | | Inc. or Dec. | P. c. |
|-------------|----------|--------|--------------|-------|
| | 1881. | 1880. | | |
| Iron rails | 10,945 | 7,841 | Inc. 2,104 | 23.8 |
| Steel rails | 20,672 | 21,456 | Dec. 814 | 3.8 |
| Two months: | | | | |
| Iron rails | 18,021 | 10,984 | Dec. 1,973 | 9.8 |
| Steel rails | 43,912 | 50,402 | Dec. 6,490 | 12.9 |

It appears then that the exports to the rest of the world (outside of the United States) were nearly the same this year as last. The United States is now almost the only customer for iron rails, having taken eight-ninths of the total British exports for the two months, while it took less than one-seventh of the British steel rail exports.

A Remarkable Car.

One of the most refreshing things in the shape of railway literature that has recently come to the office of the *Post and Tribune* is an alleged description of a new passenger coach being constructed for the Detroit, Mackinac & Marquette Railroad by Gilbert, Bush & Co., Troy, N. Y. Listen:

The wheels are high, of the French pattern, and made of the finest watch spring steel; the axles are of flexible Bessemer steel of the highest finish, and have been tested up to double the required standard. The body of the car is a model of beauty and perfection; on its roof there is to be a seating capacity for 52 second-class passengers or for employees of the road; its seating capacity for the inside is 60, and the seats are so arranged that in an instant they can be turned either into a dining or writing table, or as a sleeping berth. It will have a lavatory and an ice compartment as well as all the accommodations and conveniences found in the most elegant Pullman cars. The body of the car sets on Allen's duplex springs, and is so elevated that a commodious basement room has been made into a kitchen with a range for cooking and generating heat to warm the passenger compartments above. In one end of this basement is located

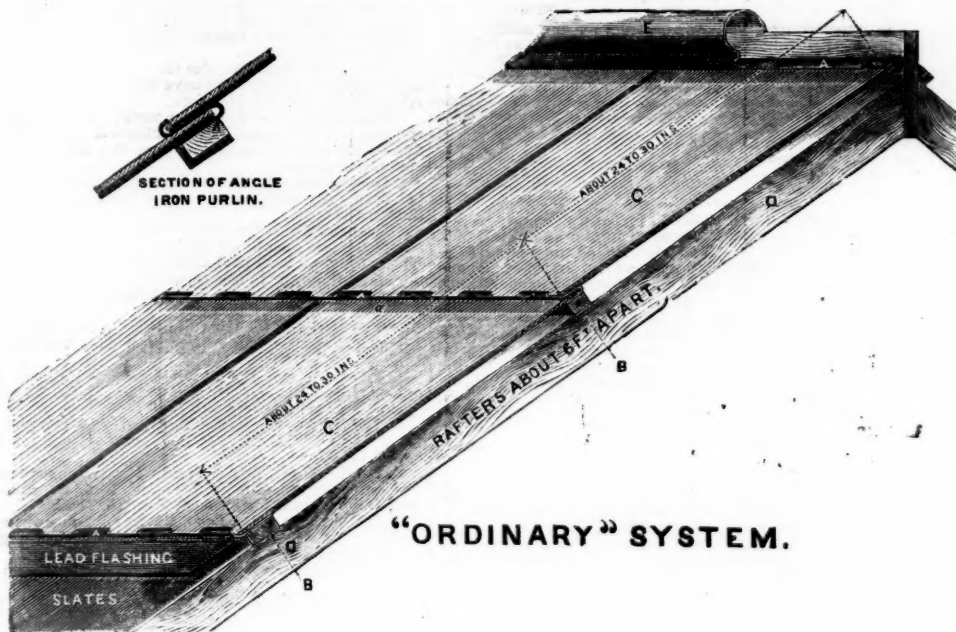


Fig. 1.

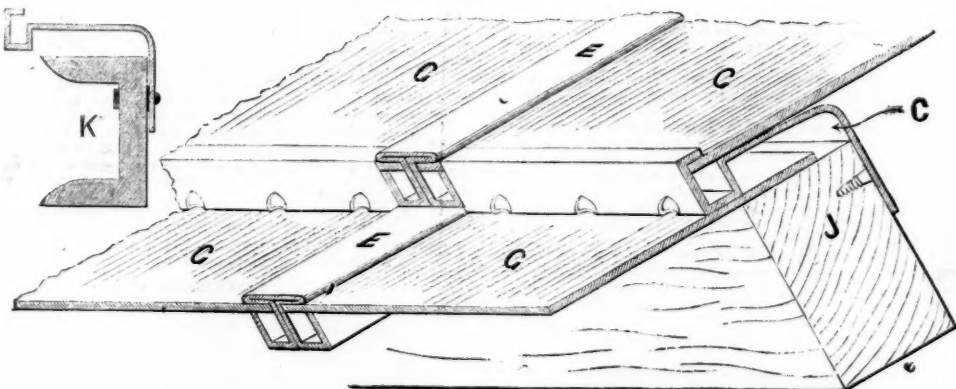


Fig. 2.

RENDLE'S SYSTEM OF GLAZING ROOFS.

sary any plate can be removed without disturbing any of the others. No paint, putty, or cement is required to make the joints water-tight, and the wood or iron framework of the roof is entirely protected by the glass and metal.

Another advantage that is claimed for it is that the glass can move freely in the grooves, and therefore is not liable to breakage from the expansion or contraction of the roof or of the glass. The vibration of large railroad roofs caused by gales of wind or passing trains is said to have little effect on it.

Fig. 2 represents another method of putting it on. The shape of the metal plates which form the grooves is shown at C. The plates of glass instead of being lapped over each other are butted together with a metal T-shaped piece, F, between them. This also has grooves under the glass plates into which any leakage will drain. The method of forming the grooves and attaching the metal plates to an iron purlin is shown at K.

Mr. Arthur C. Rendle, whose office is at No. 7 Warren street, New York, has charge of the business of introducing it into this country. He has a long list of railroad and other buildings in which it is used in England, and expects that when its merits are known there will be a great demand for it in this country.

THE SCRAP HEAP.

Locomotive Building.

The Delaware, Lackawanna & Western shops at Kingsland, N. J., are building two new passenger engines, to burn anthracite coal. The shops have also a large amount of repairing on hand.

The Paterson (N. J.) Press of March 26 says: "On Monday the last of the order for 15 engines for the Texas & Pacific road will be shipped from Danforth's."

"The second of the order for the Cleveland, Columbus,

improved steam shovel and derrick car, have just delivered a second car of this kind to the Chicago & West Michigan road, and are building for delivery in April one each for the Michigan Central and the Providence & Worcester road.

The LaFayette (Ind.) Car Works are building 50 box cars 33 ft. long for the Cincinnati, Indianapolis, St. Louis & Chicago road.

The East Tennessee, Virginia & Georgia shops at Knoxville, Tenn., are building 200 new box cars for the road.

The Wagon Car & Foundry Co., at Chattanooga, Tenn., is building 200 freight cars for the East Tennessee, Virginia & Georgia road.

The Pennsylvania Railroad shops at Altoona have received orders to build 1,500 new freight cars.

The Philadelphia & Reading shops at Reading, Pa., have orders to build 300 box cars, 200 gondolas and 1,000 coal cars for the road.

The Delaware, Lackawanna & Western shops at Dover, N. J., are building 50 new box cars and 100 coal cars for the road.

The Union Brass Manufacturing Co., of Chicago, has orders for the brass and bronze fittings for a large number of passenger cars.

The Pullman Car Shops at Detroit are building six new sleeping cars to run on the Atchison, Topeka & Santa Fe, on the through line to New Mexico and California.

J. G. Brill & Co., car manufacturers, have just finished a large addition to their works in West Philadelphia.

The Haran & Hollingsworth Co., in Wilmington, Del., has a large amount of work on hand both in the car shop and the ship yard.

Bridge Notes.

The Pittsburgh Telegraph of March 23 says: "The Engineer of the Monongahela Bridge Co., Mr. G. Lindenthal, yesterday opened the plans for the new structure to span the Monongahela at Smithfield street. The bridge will be built on the Pault system of iron and steel, and will be the first of its kind in the country. The roadway will be supported by six piers, with the customary abutments on either bank. The first pier on the north side and the two piers next to the south bank will be of comparatively small size, and to a great measure hidden from view. The three channel piers,

a bath tub, arranged for hot and cold showers as well as plunge baths. Nothing that could be devised for the comfort of the passenger has been left undone. The upholstery is to be of canary colored rep; except upon state occasions this upholstery is to be covered with linen, to protect it from soiling. The ventilation is wonderfully perfect—every inch of air is expelled once in every seven minutes, and fresh air from outside takes its place, after being first heated in the basement in the winter season, or cooled in summer, as occasion may require. In the centre will be a reading-room and library, consisting of the magazines of the day and a few choice late works on the latest sciences. The most attractive features of the exterior or interior of this car are the art decorations. On the outside, in the centre of the side of the car is a large and beautifully finished painting representing the two peninsulas of Michigan—the one covered with iron mountains and blast furnaces, the other dotted with luxuriant fields of golden grain and herds of sheep and cattle, while an aerial car is crossing on a wire rope that spans the straits. On the opposite side of the car is a strikingly correct and handsome life-size portrait of Senator Conger, in the act of handing over a quit-claim deed of the Sault Canal to President Garfield. The interior decorations are singularly fine, mostly panel pictures between the windows: the landing of the pilgrims, the inauguration of the obelisk in Central Park, view of Glenville, the throwing over tea in Boston Harbor, the battle of the Boyne, the huge ferry steamer crossing the Straits, Pictured Rocks and Au Sable banks, but the most exquisite picture of all is a correct, full life-sized portrait of Sarah Bernhardt, painted on a panel of the pantry door, which is only two inches wide! It is so true to life that on first beholding it the illusion is perfect; you think it is the live Sarah before you. The picture is no doubt intended as symbolical of the profusion of refreshments within. It would require a week's time to describe this unique car; we have only touched upon its mere outlines. This car will make one trip every day from Marquette to Mackinac, and the fare for those who ride in it will be \$10 extra over the regular fare, but this entitles the passenger to any comfort he has a mind to demand. There will be three or four other ordinary passenger cars on each train, and no one will be allowed to ride in this superb palace car without a canary-colored ticket before starting from either end of the route. The original projectors of the road are to have passed entitling them to live on this car all the time when inclined. We had almost forgotten to say that the car is named "Gen. Pope," and that to provide music for its occupants an æolian attachment is inserted at the top of each end of the car, which will play different tunes, governed by the speed at which the train is moving.—*Detroit Post and Tribune.*

A Very Cautious Conductor.

The Keokuk & Des Moines employes have a good joke on Conductor Carver. It is too good to keep. During the last snow blockade he acted very cautiously—too cautiously, it seems, for upon a certain evening he stopped his train at Nobleton and announced to the passengers that it would be impossible to proceed any further until daylight, as he knew the "divide" must be filled with snow. There was considerable grumbling, but the train remained, nevertheless, and at early daybreak Conductor Carver loaded his train with everything in the shape of a shovel to be found in that locality. He then walked up the track to see how hard the engineer would have to drive his engine against the drifts in order to get through, but he didn't find any drifts, and after starting ran into Des Moines in about 40 minutes, not finding a shovelful of snow on the track.

He was mad.
So were the passengers.
So was the engineer.
And the fireman.
And the brakemen.
And others.

[This revelation is confidential].—*Keokuk (la) Gate City.*

The Pennsylvania Fast Passenger Locomotive.

The new Pennsylvania passenger locomotive, described in our last number, has finally taken its place on the New York Division, and will this week begin to run regularly, making a round trip daily between Jersey City and Philadelphia. It has made several experimental trips already. No official reports have been made of its performance, but it is said to have run with a train the 89 miles from West Philadelphia to Jersey City in 110 minutes, making three stops.

ANNUAL REPORTS.

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Chicago, Burlington & Quincy.

The company's report for the year 1880 shows the mileage at the close of the year as follows:

| | Miles. |
|------------------------------------|-----------|
| Worked at close of 1879 | 1,760,390 |
| Added during 1880: | |
| Albia, Ia. to Moravia | 11,477 |
| Mt. Ayr to Grant City | 22,400 |
| Hastings to Carson City | 15,728 |
| Bethany Junction to Bethany | 28,586 |
| Burlington & Mo. River in Nebraska | 836,500 |
| | 914,691 |

Total at close of 1880 2,675,081
Add for roads worked jointly with other companies and roads for which a fixed yearly rent is paid 96,892

Total 2,771,973
Further notes as to increase of line worked will be found below in detail:

The equipment at the close of the year was 441 locomotives; 184 passenger, 5 dining and 84 baggage, mail and express cars; 11,457 box and stock, 3,274 flat and coal and

290 way cars; 5 officers', 7 wrecking and 4 pile-driver cars; 704 hand and 545 rubble cars.

Additions during the year, including the equipment received with the Atchison & Nebraska, were 34 engines; 17 passenger and 9 baggage, mail and express cars; 1,900 box and stock, 569 coal and flat and 13 way cars; 1 pile-driver car, 91 hand and 53 rubble cars.

The general account, condensed, but showing all the essential points is as follows:

| | |
|---------------------------------------|-----------------|
| Stock | \$54,413,196.51 |
| Bonds, including branch bonds assumed | 54,418,725.00 |
| Current accounts, pay-rolls, etc. | 1,638,905.71 |
| Profit and loss | 3,728,207.08 |
| Local aid and voluntary contributions | 1,081,797.85 |
| Income account | 119,419.29 |
| Renewal fund | 3,250,000.00 |
| Sinking fund accounts | 6,744,104.88 |

| | |
|---|------------------|
| Total | \$125,404,356.32 |
| Construction accounts | \$80,316,873.54 |
| Branch roads | 29,279,313.90 |
| Materials on hand for future use | 2,074,739.71 |
| Trustees of Iowa land grant | 2,233,110.43 |
| Sinking fund accounts | 1,844,213.85 |
| Cost of Kan. City, St. Jo. & C. B. securities | 4,540,068.33 |
| Current accounts and balances due | 5,125,436.59 |
| | \$125,404,356.32 |

The expenditures for new construction and additions to the property during the year may be summed up as follows: New work on St. L., R. I. & Chi. R. R. \$294,234.88 Road and branches in Illinois 1,259,961.44 Discount on bonds sold and premium on bonds bought 735,912.38 Road and branches in Iowa 464,480.46 New branches in Iowa 1,278,997.70 Road and branches in Nebraska 354,328.08 New lines in Nebraska 2,343,484.51 New equipment 1,476,500.26

Total \$8,207,899.71

The heaviest item was \$939,663 for land in Chicago.

The stock outstanding at the close of 1879 was \$30,883,600; at the close of 1880 it was \$54,413,196.51 (including \$74,256.51 Burlington & Missouri River in Iowa not yet exchanged and \$1,565,000 Republican Valley stock not exchangeable till 1885), a net increase of \$23,529,596.51. This increase was made up by Burlington & Missouri River (Iowa) and Republican Valley stock as above; by \$257,600 issued for Burlington & Missouri River (Iowa) old stock and convertible bonds; \$11,795,260 in exchange for stock of Burlington & Missouri River in Nebraska; \$3,619,000 issued for purchase of Kansas City, St. Joseph & Council Bluffs securities; and by \$6,218,480 issued on account of stock dividend of May 3, 1880.

The changes in bonded debt consisted in the issue of \$286,000 new 7 per cent. bonds in exchange for other bonds; \$2,400,000 Iowa mortgage 5 per cent. bonds sold; \$3,600,000 Iowa mortgage 4 per cent. bonds sold; and finally the assumption of the bonds of the Burlington & Missouri River in Nebraska, amounting to \$18,701,260. From this increase should be deducted \$1,071,000 bonds of various issues retired, making a net increase of \$23,915,500 in bonded debt. Statements elsewhere show that the 5 per cent. bonds netted the company 95, and the 4 per cent. bonds about 83 1/2.

The surplus fund on Dec. 31 amounted to \$14,573,708.53, made up as follows:

| | |
|---|----------------|
| Bonds and cash in the various sinking funds | \$6,744,104.88 |
| Invested in branches and improvements | 2,007,581.05 |
| Materials and supplies | 2,074,739.71 |
| Surplus investments | 4,068,683.89 |
| Current accounts considered good | 1,034,610.29 |

Total \$14,573,708.53

This surplus represents the excess of property and investments over the total amount of stock, bonds and available cash and cash assets.

From the land grant in Iowa 52,690.76 acres were sold for \$772,692.47; by cancellation of a number of old contracts long carried on the books, however, 74,480.55 acres reverted to the company, making an increase of 21,519.79 acres owned. Total cash receipts on land account were \$514,925.53; expenses, \$40,566.98, leaving a balance of \$474,358.55 to the sinking fund. There are 62,289 acres on hand.

In Nebraska the sales of 1880 were 270,030.07 acres for \$1,292,625.86; contracts forfeited on 35,839.01 acres, making net sales 234,191.06 acres. Cash receipts from land were \$1,113,687.47; expenses, including \$20,655.89 for increase of good assets, were \$214,372.46, leaving a balance of \$899,315.01 for the sinking fund. The land unsold is 629,600 acres.

The income account, somewhat condensed, is as follows:

| | |
|---------------------------------------|----------------|
| Balance from 1879 | \$4,416,262.91 |
| Earnings for 1880 | 20,492,046.59 |
| Net receipts from Nebraska land grant | 899,315.01 |

Total \$25,807,624.51

| | |
|------------------------------|----------------|
| Working expenses | \$9,392,904.25 |
| Taxes | 441,589.49 |
| Rent of tracks | 203,005.76 |
| Interest on bonds | 3,282,718.19 |
| Dividends | 4,368,063.89 |
| Transferred to sinking funds | 563,384.84 |
| Stock dividend, 20 per cent. | 6,218,538.80 |
| Transferred to renewal fund | 1,250,000.00 |

Total \$25,688,205.22

Balance to 1881 \$119,419.29

The actual surplus of the year's earnings over all charges and 8 per cent. dividends was \$2,272,380.17.

The traffic statistics are as follows, those for 1880 including the entire road for the whole year:

| | |
|--------------------------|-----------|
| Passengers carried, 1880 | 2,800,151 |
| " " 1879, C. B. & Q. | 2,076,484 |
| " " " B. & M. R. | 234,562 |

Total 2,311,046

Increase (21.2 per cent.) 489,105

Tons freight carried, 1880 6,639,186

" " 1879, C. B. & Q. 4,086,353

" " " B. & M. R. 719,351

Total 5,405,694

Increase (22.8 per cent.) 1,233,502

Mileage and season ticket passengers are not included. Tons freight carried include Illinois Central freight in cars of that road—376,978 tons in 1880 and 331,474 tons in 1879.

Car mileage account shows a credit of \$50,553.44, the first credit for many years.

The earnings and expenses were as follows, those of the Burlington & Missouri River in Nebraska for 1879 being included to complete the comparison:

| | 1880. | 1879. | Inc. or Dec. | P. c. |
|---------------------|--------------|------------|--------------|-------|
| Freight | \$16,054,197 | 13,534,200 | 2,519,997 | 18.6 |
| Passengers | 3,534,200 | 2,076,484 | 1,457,716 | 70.2 |
| Mail, express, etc. | 866,089 | — | 866,089 | — |
| Interest and ex- | — | — | — | — |
| change | 37,552 | — | 37,552 | — |

Total \$20,492,047

Expenses 9,804,494

Net earnings \$10,687,553

Per cent. of exps. 47.8

1879. \$8,869,824

Inc. or Dec. \$1,817,729

P. c. 20.5

1880. 49.4

D. 1.6

The earnings of the Burlington & Missouri River in Nebraska for 1879 (included above) were \$2,727,239.76; expenses, \$1,117,454.30; net earnings, \$1,609,785.46. Taxes are included in expenses.

CONDITION OF THE ROAD.

The report says: "In Illinois and Iowa during the year, 78 miles of single track have been relaid with steel rails and the 28 miles of the Leon, Mount Ayr & Southwestern Extension, from Bethany Junction to Bethany, and 27 miles of new second track have also been laid with steel rails, making the total number of miles of steel rail single track in the road Dec. 31, 1880, 1,940. This includes the whole main line in Illinois and 279 miles of main line in Iowa.

"The total length of main line now laid with iron rails is 11 miles, all in Iowa. There are 119 miles of double track in Illinois and 17 in Iowa.

"There have been added during the year, 19 1/2 miles of second track in Illinois and 12 1/2 miles in Iowa. Three and three-fourth miles of track, which is in fact used as a second track, appears under the head of the Chariton, Des Moines & Southern Railroad, and 15 miles under the head of the Chillicothe & Chariton Railroad.

"In Nebraska during the year, 27 miles of main line have been relaid with steel, and 9 miles of track on branch roads have been relaid with iron rails. The total number of miles of steel rail single track in the road Dec. 31, 1880, was 54, and is all in the main line between Omaha and Plattsmouth and Kearney Junction.

"During the year, besides the ordinary bridge repairs, 5,500 lineal feet of bridges have been rebuilt, chiefly on the Atchison & Nebraska Division.

"Extensive repairs have been made on buildings, water stations, and equipment of the Atchison & Nebraska Division, and by the close of the present year they will have reached standard condition.

"The general condition of the entire road and equipment has been fully maintained, and, in some respects, improved during the year.

"The bridge over the Missouri River at Plattsmouth was completed and opened for business Sept. 12, 1880, but as the bills had not all been paid at the close of the year the cost does not all appear in this report."

During the year branch roads have been built in Iowa, in whole or in part, as follows:

1. The Moulton & Albia Railway was completed from Albia to Moravia, 11 miles, and opened for business June 10, 1880.
2. The Leon, Mt. Ayr & Southwestern Railroad was extended from Mt. Ayr to Grant City, Mo., 22 miles, and opened for business Sept. 20, 1880.
3. The Hastings & Avoca Railroad was completed from Hastings to Carson City, 16 miles, and opened for business Oct. 6, 1880.
4. The Leon, Mt. Ayr & Southwestern Railroad extension from Bethany Junction to Bethany, Mo., 28 miles, completed and opened for business Nov. 15, 1880.
5. An extension of the Leon, Mt. Ayr & Southwestern from Bethany to Albany, Missouri, 18 miles. Grading partly done; will probably be completed by June 1, 1881.

In Nebraska during the year new roads have been built as follows:

1. A part of the West Division of the Republican Valley Railroad between Bloomington and Indianola, 79 miles, completed and opened to Indianola May 23, 1880.
2. A part of the East Division of the Republican Valley, from Amboy (Red Cloud Junction) to Hubbell, 52.7 miles. Completed and opened to Hubbell Dec. 5, 1880.
3. The Northern Division of the Republican Valley road from Aurora to Central City, 19.2 miles. Completed and opened to Central City April 4, 1880.
4. A part of the Eastern Division of the Republican Valley between Hubbell and Beatrice, 63.8 miles, is nearly completed; 23.6 miles of track are laid, and the remaining 40.2 miles will be completed about March 10, 1881.
5. The line between Nemaha City and Tecumseh (Republican Valley), 31.5 miles, is now being graded. No track has yet been laid. It will be completed and in operation about May 15, 1881.
6. The line between Blue Springs Junction and Table Rock (Republican Valley), 38.1 miles, is now being graded. No track has yet been laid. It will be completed and in operation about May 15, 1881.

GENERAL REMARKS.

The year is considered a prosperous one for the company. A handsome surplus was earned over all charges and the usual dividends, but a large expenditure was necessary for improvements.

Arrangements have been made with the Pittsburgh, Ft. Wayne & Chicago for bringing the passenger business of the road into the Union depot in Chicago. Considerable expenditure will be necessary for new freight facilities in that city.

The report says: "As the stockholders are aware, the event of the year with us has been the acquisition by this company of the main stem and the leased lines of the Burlington & Missouri River Railroad Company in Nebraska, the detailed contract for which was laid before your special meeting of Feb. 28, 1880, and duly ratified, giving us 836 additional miles now in operation, with about 109 miles under construction and expected soon to be in operation. It is believed that the addition of so large an amount of mileage in this new and only partially developed country will result not only in direct profit from those lines as the country grows, but also in making permanent a considerable increase of traffic for the main line east of the Missouri River.

"In Illinois no additional mileage has been created, except for second track, as stated elsewhere, but the company have added during the year in Iowa 77 miles of new branches, as shown in detail elsewhere in this report.

"It has been thought expedient by the directors to prepare the way for the permanent lease to or consolidation with this company, of the property and franchises of the Kansas City, St. Joseph & Council Bluffs Railroad Company, the preliminary steps for which have been taken, a portion of the securities of that company having been exchanged, upon terms satisfactory to the directors, for the stock of this company. Some progress has also been made in bargaining for other smaller and contiguous lines, which can be worked advantageously by the company, but the negotiations are not yet sufficiently advanced to report at this time.

"The margin of profit on the carriage of the great staples is so small that it has seemed to the directors a matter of vital importance to, so far as practicable, secure and make permanent a large volume of business, and they believe this has, to a considerable extent, been accomplished by the control of the lines of the Kansas City, St. Joseph & Council Bluffs Company and those of the Burlington Company in Nebraska.

"It will be seen that we have increased the number of tons carried 22.8 per cent., while our increased gross freight earnings have been only 16.99 per cent., and that a similar difference exists in our passenger traffic. This indicates that we have, without any serious war of rates or pressure from without, voluntarily reduced our rates during the year.

"A main line of road, like the Chicago, Burlington & Quincy, between the Missouri River and Chicago, until it is

worked to its utmost capacity, must, so to speak, compete with itself for business. That is to say, its natural effort will be to work to its full capacity, and in order to get additional business, to reduce the rates of transportation until that point is reached. Hence it is that the rates tend constantly downward, not only in regions of country which are served by more than one line, but also in regions which have but one line of railroad. With the acknowledgment of this fundamental truth has come (for the time being at all events) a cessation in the attempts witnessed in the West a few years ago to regulate rates by law.

"Whether the renewed agitation of the questions of railroad regulation by persons interested, from political or other motives, will result in further legislation, detrimental alike to the railroads and the public, must depend upon the good sense of the people and their legislators. Your directors have faith to believe that the business world has reached the wise conclusion that no legislative enactment can take the place of the natural laws regulating all prices, including the price of transportation by rail. But as upon the correctness of this belief depends the wisdom of making continued additions to the property and the constant increase of facilities involving moderate dividends upon the stock of the company, and (besides the expenditure of all the surplus) a constant increase of debt, it becomes of paramount importance to every stockholder to consider for himself what are the probabilities. The alternative would obviously be to divide in cash all of the net receipts instead of improving the property; and such a course would probably be the wise one if the property is to be regulated to its injury by those jurists and political economists who seem to believe that the whole net or perhaps gross receipts of American railroads, which are earned upon very much lower rates than are found elsewhere in the world, are fraudulently wrung from the pockets of the community. It is a somewhat singular fact, and one to be noted, that the extreme statements and opinions which have recently been made public upon this important question of state regulation of rates, have come from Eastern and not from Western men.

"When consolidating with the Burlington & Missouri River Railroad in Nebraska, last spring, it was deemed just and proper to distribute stock to represent a part of the surplus earnings which had accumulated and had been invested in very valuable additions to our property at low prices.

"We have, under a conservative policy, so far improved our credit that we may expect to refund upon very favorable terms any part of our loans which it is best to extend. Feeling, as your directors do, the responsibility of managing so large a property, held by such numbers of stockholders (our lists now numbering over 5,000), they will endeavor to keep upon the safe side.

"Your directors regret to announce that since these sheets have been in preparation we have been so unfortunate as to lose, by death, the valuable services of Mr. George Tyson, on Jan. 8, and Mr. J. M. Walker, on Jan. 22.

"Mr. Tyson brought to the exercise of his duties as Comptroller an indefatigable industry and qualities of mind and character so rare that it will hardly be found possible for any one person to adequately fill his place.

"Mr. Walker has for the past 15 years filled the post of General Solicitor and Counsel, with a natural good judgment and discretion, a trained sagacity and a patient and untiring devotion to the important interests intrusted to him which it is not easy sufficiently to praise."

New York, Pennsylvania & Ohio.

The first annual report of this company, successor to the Atlantic & Great Western, is for the period from the company's formal possession, Jan. 7, 1880, to Dec. 31, 1880. The figures are given for the full year, and, as no report was issued by the Receiver for 1879, the report really covers the years 1879 and 1880.

The road worked is stated in the report as follows:

| Main Line. | Sidings. |
|--|----------|
| Miles. | Miles. |
| Main Line, Salamanca, N. Y., to Dayton, O. 387.908 | 104.671 |
| Franklin Branch, Junction to Oil City 33.780 | 6.920 |
| Silver Creek Branch 1.554 | |
| Cleveland & Mahoning Railroad, Cleveland to connections with Western Railroad near Pennsylvania and Ohio state line 80.810 | 41.359 |
| Niles & New Lisbon, Niles to mines south of New Lisbon 36.053 | 4.672 |
| Liberty & Vienna, Junction to Vienna 8.033 | 0.736 |
| West-erna Railroad, near Pennsylvania and Ohio state line to Sharon 2.092 | 0.276 |
| Sharon Railway, Junction with Main Line to Sharon 7.780 | 1.975 |
| Branch of Sharon Railway 2.881 | |
| Total 557.988 | 189.28 |

In addition to the above there are still remaining 2,217 miles of the 3 ft. gauge road, mentioned in Article Second of the First Section of Lease of Sharon Railway to the Atlantic & Great Western.

Under the leases as now amended the rental paid for the Cleveland & Mahoning, the Niles & New Lisbon and the Liberty & Vienna roads is \$357,180 yearly until Jan. 1, 1885, and \$412,180 after that date, besides all taxes.

The rent paid for the Sharon road is 7.3 per cent. on its cost; last year it was \$26,254. The rent of the Western-mau road (formerly the Sharon Branch) is \$3,000 per year.

The equipment consists of 209 locomotives; 78 passenger, 20 combination, 3 postal and 38 baggage, mail and express cars; 1,570 box, 151 stock, 2,656 flat and coal, 26 coal dump and 101 caboose cars; 1 private car, 1 pay car, 1 pile-driver, 7 wrecking and 7 tool cars and 5 locomotive trucks.

The capital stock and bonded debt authorized by this company are as follows:

| | |
|-------------------------------------|------------------------------------|
| Common stock 335,000,000.00 | Preferred stock 10,000,000.00 |
| Total stock 345,000,000.00 | |
| Prior-lien bonds 8,000,000.00 | First-mortgage bonds 35,000,000.00 |
| Second-mortgage bonds 14,500,000.00 | Third-mortgage bonds 30,000,000.00 |
| Total bonds 87,500,000.00 | |

Of the above, advice has been received of the issue of \$8,000,000 of prior-lien bonds, and of about \$34,500,000 of first-mortgage bonds; the other classes of bonds and the stock are in process of issue by the Trustees in exchange for trustees' certificates.

The prior-lien bonds are the only absolute interest bearing securities, carrying 6 per cent. The first-mortgage bonds bore 5 per cent. to Dec. 31, 1880, and 7 per cent. from that time, but payable only if earned, any balance not earned to be paid in deferred warrants, which can be capitalized in new bonds. The second-mortgage bonds bear 5 per cent., payable only if earned; the third-mortgage bonds the same. Preferred and common stocks are each entitled to 1 per cent. in its turn, any surplus after paying all these charges to be divided among the various securities.

The stockholders at present have no votes, the stock being vested in Voting Trustees until the earnings shall have been sufficient for three consecutive years to pay 7 per cent. interest on all the bonds, including the third-mortgage bonds. President Devereux says:

"The parties in interest seemed to have formed their scheme upon the plan of keeping alive not only all the bonded indebtedness of the Atlantic Company owned by them, but the capital stock as well; but inasmuch as the bonded indebtedness greatly exceeds the value or cost of the property, and the bondholders were necessarily the beneficiary owners of the property, they seem to have made it the condition under which the old stock should be represented—that the substantial control of the new company should be vested in the bondholders until a time when the dividends earned should demonstrate that the stock had a substantial value, and provided in their scheme that the stock should be placed in trust and voted by trustees appointed as stated above; and in carrying out that portion of the scheme the Trustees very properly required that this company should receive its title to the property conditioned upon its carrying into effect such voting trust. This company, therefore, in pursuance of the provisions of its contract of purchase, and as directed in writing by the Purchasing Trustees, issued the stock to the Reorganization Trustees, who had been appointed *ad interim* Voting Trustees; and provided for the terms of the trust by provisions incorporated in the by-laws, and upon the stock books of the company the Trustees appeared as the legal holders of all the stock of the company except 26 shares reserved for the purpose of qualifying directors, the company executing beneficiary certificates to be issued by the Trustees to the parties interested in the stock and represented by them."

The income account for the period from Jan. 7, when the present company took possession, to Dec. 31, is as follows, somewhat condensed:

| | |
|---|--|
| Gross earnings 55,179,007.10 | Expenses 3,517,016.33 |
| Net earnings 51,659,180.77 | Receipts from other sources 28,174.79 |
| Total net 51,687,355.56 | Purchasing Trustees—supplies on day of purchase 280,288.23 |
| Deferred warrants for one-half first mortgage interest 431,250.00 | Total to be accounted for 52,398,893.79 |
| Use of foreign cars and engines 272,129.40 | Rents 348,797.96 |
| General expenses and taxes 59,319.83 | Cost of road, additions, etc. 546,698.17 |
| Stock, Sharon Ry., etc. 53,708.83 | Interest on prior lien bonds 400,000.00 |
| Interest on first-mortgage, half 431,250.00 | Excess of receipts 286,989.60 |
| This surplus is represented as follows: | Supplies on hand 411,023.00 |
| Cash and cash assets 1,256,424.75 | Total 1,667,447.75 |
| Supply-bills, wages, etc. 549,208.15 | Interest on debt 831,250.00 |
| Excess of assets 286,989.60 | |

The new securities not yet appearing on the books, the general account is merely a partial repetition of the income account.

For the period from Jan. 1 to Jan. 7, under the Receiver the gross earnings were \$86,260.88; net earnings, \$30,920.76; rentals, etc., \$20,525.08; surplus, \$10,295.68.

The actual surplus earned during the year over all charges, improvements and half interest on first-mortgage bonds, was \$89,909.38.

The statements given below are all for the full calendar years 1880 and 1879, having been so made in the report for comparison and for future reference. The earnings for the year were as follows:

| | 1880. | 1879. | Increase. | P. c. |
|---------------------------------|----------------|----------------|--------------|-------|
| Freight..... | \$3,945,493.56 | \$3,310,284.23 | \$635,209.33 | 19.2 |
| Passenger..... | 1,140,444.09 | 923,699.66 | 216,844.43 | 23.4 |
| Mail..... | 42,513.34 | 38,329.30 | 4,184.04 | 11.0 |
| Express..... | 64,335.40 | 52,682.25 | 11,653.15 | 22.2 |
| Miscellaneous.... | 72,471.09 | 58,710.61 | 13,760.48 | 23.3 |
| Total..... | \$5,265,357.48 | \$4,383,706.05 | \$881,651.43 | 20.1 |
| Expenses..... | 3,575,289.13 | 3,485,279.61 | 89,989.52 | 2.6 |
| Net earn..... | \$1,690,088.35 | \$898,426.44 | \$791,661.91 | 88.1 |
| Gross earn. per mile..... | 9,438.12 | 7,856.10 | 1,582.02 | 20.1 |
| Net earn. per mile..... | 3,028.83 | 1,610.08 | 1,418.75 | 88.1 |
| Per cent. of ex- penses..... | 67.91 | 79.50 | | |

The traffic for the year was as follows:

| | 1880. | 1879. | Inc. or Dec. | P. c. | |
|-----------------------------|-------------|-------------|--------------|------------|------|
| Passengers carried, local | 1,119,559 | 871,540 | I. | 248,019 | 28.5 |
| Passengers carried, through | 203,935 | 144,283 | I. | 59,652 | 41.3 |
| Total | 1,323,494 | 1,015,823 | I. | 307,671 | 30.3 |
| Passenger miles, local | 25,660,332 | 21,948,845 | I. | 3,711,487 | 16.9 |
| Passenger miles, through | 30,374,881 | 21,920,776 | I. | 8,454,105 | 38.5 |
| Total | 56,035,213 | 43,878,621 | I. | 12,156,592 | 27.7 |
| Tons freight, local | 2,323,406 | 1,682,024 | I. | 641,442 | 38.1 |
| Tons freight, through | 1,802,513 | 1,867,071 | D. | 64,558 | 3.4 |
| Total | 4,125,919 | 3,549,095 | I. | 576,884 | 16.3 |
| Ton miles, local | 117,428,078 | 120,624,104 | D. | 3,196,026 | 2.5 |
| Ton miles, through | 356,851,653 | 354,238,988 | I. | 2,612,667 | 0.7 |
| Total | 474,279,731 | 474,863,092 | D. | 583,361 | 0.1 |
| Av. cars per train: | | | | | |
| Passenger | 4.90 | 4.80 | I. | 0.10 | 2.1 |
| Freight | 16.02 | 16.10 | D. | 0.08 | 0.5 |
| Av. load per car: | | | | | |
| Passengers | 12.10 | 13.40 | D. | 2.30 | 17.1 |
| Tons freight | 7.37 | 6.63 | I. | 0.74 | 11.2 |

The average rate per passenger per mile was 2.498 cents for local and 1.644 cents for through; per ton per mile, 1.180 cents for local and 0.717 cents for through.

The earnings and traffic show upon the whole a very satisfactory result for the year, the chief drawback being in the loss of so large a part of the oil traffic.

The average earnings per train mile and per unit of traffic were as follows, in cents:

| | Passenger— | Freight— |
|----------------------------|------------|----------|
| Per train mile: | 1880. | 1879. |
| Receipt 90.2906 | 81.7459 | 98.3553 |
| Cost 51.8970 | 49.0923 | 71.2659 |
| Profit 38.3936 | 32.6536 | 27.0894 |
| Per pass. or ton per mile: | 2.0354 | 2.1051 |
| Receipt 1.1099 | 1.2642 | 0.8918 |
| Cost 0.9655 | 0.8400 | 0.0027 |
| Profit 0.1444 | 0.4242 | 0.8891 |

The course of traffic for nine years past has been as follows:

| Years. | Passenger miles. | Rate. | Ton miles. | Rate. |
|--------|------------------|-------|-------------|-------|
| 1872 | 38,789,832 | 2.647 | 255,478,901 | 1.496 |
| 1873 | 38,870,251 | 2.545 | 276,922,427 | 1.450 |
| 1874 | 39,101,207 | 2.361 | 304,975,033 | 1.186 |
| 1875 | 34,299,344 | 2.353 | 299,410,124 | 0.981 |
| 1876 | 39,091,988 | 2.023 | 288,360,454 | 0.905 |
| 1877 | 32,354,286 | 2.316 | 337,378,487 | 0.908 |
| 1878 | 37,242,604 | 2.242 | 370,726,196 | 0.835 |
| 1879 | 43,878,621 | 2.105 | 474,863,092 | 0.697 |
| 1880 | 56,035,213 | 2.035 | 474,279,731 | 0.831 |

Coal, ore and oil are very important articles of traffic on this road, and the business was as follows:

| | 1880. | 1879. | Inc. or Dec. | P. c. |
|----------------------------|---------|-----------|--------------|-------|
| Bituminous coal, tons..... | 921,497 | 655,625 | I. 265,872 | 40.5 |
| Anthracite coal, tons..... | 81,644 | 84,944 | D. 3,300 | 1.9 |
| Ore, tons..... | 494,569 | 375,378 | I. 119,191 | 31.7 |
| Oil, barrels..... | 835,556 | 2,385,732 | D. 1,550,176 | 65.7 |

The course of traffic in these articles for six years has been as follows:

| | Coal, tons. | Ore, tons. | Oil, barrels. |
|---------------------|-------------|------------|---------------|
| Year 1880 1,003,141 | 494,569 | 835,556 | |
| " 1879 740,599 | 375,378 | 2,385,732 | |
| " 1878 621,743 | 255,908 | 2,027,702 | |
| " 1877 747,145 | 245,199 | 3,530,188 | |
| " 1876 746,642 | 204,128 | 2,158,149 | |
| " 1875 728,967 | 175,907 | 2,179,830 | |

The large increase in coal and ore traffic after remaining nearly stationary or decreasing for several years, is readily explained by the sudden revival of prosperity in the iron business. The loss in oil is probably caused by the change in the centre of oil production and by the diversion of oil to other routes and to the pipe lines.

The report of the President, Gen. J. H. Devereux, says: "Freight rates have been at a low standard, but have been signally maintained in evenness and uniformity, resulting in a gratifying increase of the average gross rate."

"The development of traffic from the general prosperity of the country has been most marked, and is quite apart from the advantages which were opened to the road in reaching and accommodating business by a common gauge with every connecting line. And throughout the fall and winter it has been impossible to comply with the increased demands for cars in respect of both through and local traffic."

"The board, under the sanction of the Reorganization Trustees, has concluded arrangements for purchasing 2,700 new freight cars, to be delivered in the spring and early summer of 1881. These cars are to be furnished under a car trust, the plan of which amounts substantially to borrowing the money for a period of seven years, the principal covering the actual cost of the equipment, at a rate of 7 per cent. per annum. The current monthly payments due under the trust liquidate its debt gradually, and stand against the loss which would follow from the hiring or use of foreign cars under mileage, and the certain loss which would attend the road's inability to adequately provide for freight business. At the end of the seven years the cars will have been paid for and will belong to the company. These cars are to be built in accordance with the standard specifications of the road, and under the company's inspection."

"The total length of main track is 557.988 miles, of which 368.98 miles are laid with steel rails. In the company's shops during the year 48 locomotive engines and 1,497 cars of all classes have been changed from the gauge of 6 ft. to the standard gauge of 4 ft. 8½ in.

"The original plan of changing the gauge of the main line over its entire distance, by moving both rails inward, had to be modified for the reason that it was found impossible to provide a sufficient number of narrow gauge locomotives for current service when the gauge of the track should be changed. No satisfactory arrangement could be made with the locomotive builders, either in respect of the price for changing the gauge of a portion of the railroad's broad gauge power, or as to the time in which such work could be accomplished. The responsibility of changing the gauge of both locomotives and cars had of necessity to be assumed by the company. And one result was the laying of a third rail between Salamanca and Leavittsburg, 164.75 miles, and upon the intermediate and terminal sidings, 43.58 miles additional.

"This third rail was simply to use broad gauge locomotives upon, and as the broad gauge locomotives were gradually brought to standard gauge in the company's shops, the use of the third rail in the track would be dispensed with. The alteration of the locomotives has already progressed so far that the portion of the third rail track between Franklin Branch Junction and Leavittsburg will be taken up before summer, and the rail relaid again in the current work of track repairs. Later in the year the other portion of the third rail will be removed, and be also used for future repairs in the standard gauge track."

"Between Leavittsburg and Dayton, 223½ miles, and the sidings appertaining thereto 65.65 miles, in all 288.865 miles, the gauge was changed by moving both rails equally on the cross-ties, bringing the gauge to 4 ft. 8½ in. from its original width of 6 ft.

"This work was accomplished on Tuesday, June 22, beginning at 4 o'clock in the morning. At 9 o'clock, or in five hours, the entire track labor had substantially been finished, although five hours more were occupied in testing the accuracy of the completed work. At 2.30 p. m. the order was given declaring the road open throughout, and the traffic of the line was resumed with standard gauge trains."

"The day closed with no special delay to the road's business; with its trains on schedule time, and without an accident or casualty of any kind having occurred. During the day but two passenger trains were interrupted in their regular schedule run."

The report credits Chief Engineer Latimer and his subordinates for the successful performance of this work, and returns thanks to officers of other companies, who sent a large number of track-men to assist in the work.

The President's report concludes as follows: "The physical condition of the road, in most respects, is excellent. Its track generally and the equipment are in exceptionally good condition. Its power is sufficient for the additional cars which have been purchased."

"There are needs for station buildings and station improvements; and the use of consolidation locomotives (which are working with most gratifying results), now that the traffic has so greatly increased from the West beyond the road, requires the rebuilding of the bridges, most of which are old, upon the division west of Kent."

"The material of the third rail (steel rail), between Salamanca and Leavittsburg, when taken up will be largely relaid upon this particular division."

"In the future of the road there is much of encouragement. Competition will undoubtedly have to be met, and competition freed from reasonable restraint, as in the past, may destroy rates which alone give revenue. But in the changed position of the line, in the development of the country, there will be compensation for losses in one direction by new sources of traffic in another, and there undoubtedly may be expected improved relations to business through fresh channels opening or to be opened."

"The relations of the road to all its connections east and west are harmonious and satisfactory."



Published Every Friday.

CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

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EDITORIAL ANNOUNCEMENTS.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE NEW YORK, PENNSYLVANIA & OHIO.

The first annual report of the New York, Pennsylvania & Ohio Railroad Company, an abstract of which we publish this week, not only gives the statistics of 1880, but also those of 1879, the latest report of the Receiver covering 1878. The new company worked the road for all but six days of 1880, with which its history may be said to begin. It is, as we know, the successor of the Atlantic & Great Western Railroad Company, of doleful memory, and the arrangement made by which the stock and bondholders of the bankrupt corporation are represented in its successor gives the latter a unique organization.

The trouble with the Atlantic & Great Western was, chiefly, water. A more dropsical concern never existed. Whole seas had been injected not only into its stock but into its bonds—the vital parts of a railroad company in which dropsy is fatal. No railroad in America had such a magnificent capital account per mile of road. Yet it was not by any means a costly road; it had little or no second track, no costly appliances, no elaborate equipment. Indeed, it leased more than half of the rolling stock it used. There is not one large city on the line of the railroad it owns, and so there was no investment of millions of dollars in costly real estate and terminal yards, stations and storehouses, such as is required of railroads entering New York, Chicago, Cincinnati, Buffalo, etc.

When the final crash came and it was necessary to make some kind of a reorganization, the greatest obstacle to an agreement seemed to be due to the fact holders of the tens of millions of worthless stock were also holders, or influenced holders, of considerable amounts of bonds, and they insisted on having their stock recognized in the new company. Provision was made for this, and the New York, Pennsylvania & Ohio Company started into life with 422 miles of road represented by \$45,000,000 of stock and \$87,500,000 of bonds—\$314,000 per mile, more than \$200,000 of which are called

bonds. But before the reader concludes that the new company has prepared itself for early bankruptcy, let him note the peculiar rights, privileges and claims of these huge issues of stocks and bonds.

And first we will say that in spite of a funded debt of \$87,500,000, the yearly fixed charge for interest is only \$480,000. That is, the only bonds on which interest must be paid as it accrues are the \$8,000,000 of "prior lien" bonds, issued to retire the old Ohio mortgage, pay Receiver's debts, purchase equipment in place of that hired hitherto, and make some much needed improvements. The \$34,500,000 of first-mortgage bonds leave 5 per cent. interest until the end of this year, and 7 per cent. thereafter, but for 15 years, or until the prior lien bonds have expired, this interest, or as much as may be necessary, is payable in "deferred interest warrants," ranking with the first mortgage bonds, when the net earnings are insufficient. Last year one-half of the 5 per cent. interest on these bonds was paid in these warrants and one-half in cash. After 1894, it is true, \$2,450,000 a year in cash will be required to pay interest on these bonds, and the principal will be due in 1905. The \$14,500,000 of 5 per cent. "second-mortgage bonds" are an income bond, with interest non-accumulative, but with principal payable in 30 years; the \$30,000,000 of 5 per cent. third-mortgage bonds are also income bonds having 35 years to run. There is thus no immediate danger. That may be looked for when the lower classes of bonds mature, perhaps, but that time is distant.

The stock is also peculiar, in that it is limited (both common and preferred) to dividends of 1 per cent.; if there is a surplus after paying that, it will be divided equally among the whole \$89,500,000 of second and third mortgage bonds, common and preferred stock.

Now the danger would appear to be that the control of the property would lie with those who can have hardly any hope of ever getting any share of its profits. But this has been guarded against by another peculiar provision. Until 7 per cent. has been paid for three consecutive years on the third-mortgage bonds (which cannot be done until the company has \$7,395,000 of net earnings in excess of rentals, or \$17,500 per mile), a majority of the stock will be held and voted by five "voting trustees," three of whom are elected by the first-mortgage bondholders, one by the second-mortgage bondholders, and one by the "leased-line" bondholders of 1872 (who really have nothing to do with the new corporation). The arrangement is very similar to that of the New York, Lake Erie & Western, except that in the latter certain classes of the bonds have voting power, and may possibly outvote the voting trustees; and, moreover, the event which will determine the existence of the Erie voting trust, and restore the full control to the stockholders, is one which may be expected to occur at some not very distant day on the Erie, while it is so very improbable on the New York, Pennsylvania & Ohio that the voting trustees, who were chosen last winter, will probably be in control (if they live so long) until the first-mortgage bonds are due. We believe they hold office as long as the trust lasts, so that it seems probable that the New York, Pennsylvania & Ohio Railroad will be controlled for many years to come by Gen. Sir George Balfour, Rev. J. Lockington Bates, Right Hon. Henry Cecil Raikes and Charles E. Lewis, M. P., all but Mr. Raikes having been re-organization trustees, and so for some years actively engaged in the affairs of the road. There is hardly any other railroad management in the country whose lease of life seems so perfectly assured.

By this organization the remote possibility that some of the lower security-holders may receive something from the profits of the company is preserved to them, and yet the company is not left to the control of those who have only this remote interest; but it is given to the first-mortgage bondholders, who will expect to receive something yearly, and to whose benefit the fruits of good management for some time to come will wholly inure. The net income after paying rentals was \$1,017,504 last year (and more than the total for the five years previous), and to pay interest on the prior lien bonds and 7 per cent. in cash on the first mortgage bonds requires \$2,930,000. Until that amount is exceeded, the first-mortgage bondholders will receive all the increase in profits.

The rolling stock provided by the prior-lien bonds will relieve the road of part of its heavy yearly charge for rent of rolling stock, amounting in 1880 to \$283,000, but of part only. The proceeds of the prior lien having been inadequate (mostly absorbed by the Ohio mortgage and Receiver's debts), the company has contracted to purchase 2,700 freight cars through a car trust, the principal being paid in monthly installments extending over seven years. These payments will, of

course, lessen the divisible profits, as they will be chiefly on capital account.

As regards the business of the road during the year covered by the report, we can do little more than refer to the abstract of the report on another page. The passenger traffic was 27.7 per cent. greater in 1880 than in 1879, and 51 per cent. greater than in 1878, when we last reported it. On the other hand, there was no increase in freight traffic from 1879 to 1880, the road being the only important one we know of on which this was the case; from 1878, however, to 1879, there was the great increase of 44 per cent. in freight traffic. The failure to increase in 1880 was at least partly due to the falling off in the petroleum traffic, formerly one of the largest items in this company's business. In 1879 it carried 2,385,752 barrels; in 1880 only 835,556 barrels (and more than half of that in the first three months of the year). Formerly the supply of crude to the Standard Company's vast works in Cleveland was largely brought by this road. Now it is received by a pipe line and the railroads carry little but refined oil. With these changes in traffic there was an increase of 20 per cent. in gross earnings, of 2.6 per cent. in working expenses, and of 88 per cent. in net earnings, which hitherto have been painfully small. There was an increase of 19½ per cent. in the average freight rate (to which seven-eighths of the increase in earnings was due), and a decrease of 9¼ per cent. in the average passenger rate.

The prosperity of this road more than that of any other save two or three is dependent on the maintenance of through freight rates, though it profits largely by activity in the iron and coal business. But a return to the through rates of 1879 would cut off the larger part of its profits. It has much to hope from improvements in road and rolling stock which will reduce the cost of transportation on its line, and these it is preparing to make gradually. Under its peculiar organization it will be very difficult for it to raise any considerable amount of new capital, there being no authority to issue any more prior-lien bonds, and securities of lower rank not being negotiable on good terms. No very large amount of capital is likely to be needed soon, however, and if there should come such a pressure of profitable traffic as to make costly improvements necessary, doubtless then it would not be difficult to get the capital.

RAILROAD CROSSING SIGNALS.

In the state of Massachusetts there has been a law in existence and in force which was enacted soon after the celebrated Norwalk accident, requiring all trains to come to a dead stop before crossing a draw-bridge or another railroad at grade. That law has recently been repealed to the extent of permitting trains to run over such places without stopping, provided the railroad company erects and uses such a system of signals as the Railroad Commissioners of that state may approve of. Quite naturally the new enactment has stimulated inventors, and probably as soon as the fact becomes generally known the Railroad Commissioners will have plans of all degrees of impracticability and ingenious ineffectiveness to pass judgment on.

The problem presented is, however, not a difficult one. Any person familiar with the principles and construction of interlocking signals would have little trouble in devising a system of that kind for an ordinary grade crossing which would effectually guard against collisions, or rather reduce the danger of them so that it would be no greater to trains which run without stopping than it now is with the full-stop rule in force. There would be reason for regret, though, if the Commissioners should recommend any specific plan or form of construction, because, by so doing, they would in a great measure prevent the application of much mechanical skill and ingenuity to the improvement and perfecting of the apparatus to be used.

A system of signals which will make it safe for trains on two railroads to pass over a grade crossing with safety must be constructed on certain principles, which experience and investigation have recognized and elaborated with more or less definiteness. These may be formulated, or distinctly stated, and it is of little importance what special mechanical contrivance is used, provided it fulfills the requisite conditions for securing safety. Let the Commissioners state the principles which any system of signals for crossings or draw-bridges must embody and conform to, and it will then leave the field open to all inventors and mechanics to devise and improve the mechanism for doing what the authorities shall say such a system of signals must do.

As we have said before, the problem of a crossing or draw-bridge is a very simple one in interlocking signals, but as that system is understood by compara-

tively few, even among railroad officers, in this country, a little consideration of the elementary principles as applied to the localities named may not be unwelcome to our readers.

To get a distinct image of the problem in our minds, let us suppose that fig. 1 represents a plan of a crossing of two lines of railroad. In such a locality, the most primitive system of signals is a man—usually of Hibernian extraction—stationed at the crossing with red and white flags or lamps, unless the absence of any signals of any kind whatever—not an unusual case—may be regarded as still more primitive. With the red signals the attendant warns approaching trains to stop, and with the white ones to come on. That it would be easy for him to make a mistake and display the wrong signal is evident. The next step was to place a signal in the form of a disc or semaphore on a stand or post arranged so that turned in a given position it will show red to one line and white to the other, and therefore it could never show white, or come on, to both at the same time. It might and did seem to railroad men at first as though this would be an effectual security at crossings and other similar places, as the signal would always indicate stop to one road and come on to the other. There is, though, apparently, a wonderful ingenuity in inanimate things to bring about disaster, especially if these are connected in any way with a sentient being, whose duty it is to prevent it. Many cases could be found in which through mistake, confusion, misapprehension, neglect, or sheer stupidity, the signalman with such an appliance would first signal a train on one line to come on, and, before it had crossed, change the signals, and thus induce one on the other road to go ahead. Sometimes the signals would be see-sawed first to one line and then to the other, until the locomotive runners and the signalman himself would be utterly confused, and both trains would come on at once.

In the reports of the British Board of Trade, one of the most prolific causes of accident which is noted is the "over-running of signals." That is, a signal is properly given and is observed by the locomotive runner, who intends to stop his train, but by reason of the state of the track, non-application or defective condition of the brakes, the weight of his train, or from other causes, he is unable to stop his train at the place he expects to. If this should occur at a crossing or a draw-bridge when a train is passing, or the bridge is open, an accident is inevitable. To guard against this, signals are placed at some distance—from 500 to 2,000 ft.—from the point of danger, and these are set to correspond with the position of the "home signal," as it is called, at the point of intersection of the tracks, or immediately at the draw-bridge. Approaching trains are thus warned at the distance named from the point of danger if the crossing is obstructed or the bridge opened, or, as the English people say, if the track is "fouled," which signifies any obstruction or disturbance to its continuity. In the case of a crossing like that shown in fig. 1, four such distance signals, A, B, C, and D, would be required, and they are made so that they can be operated by a wire, pneumatic or hydraulic pressure, or electricity, from the crossing or home signal at F. When such signals are used, trains are required to stop beyond them when the crossing is fouled. In case the locomotive runner should fail to stop his train when he reaches the distance signal, and should over-run it, there will still be the distance between it and the crossing to stop in before the point of actual danger is reached. This distance then becomes, as it were, a factor, or perhaps it might now aptly be called a haven, of safety.

It will be evident that with five signals, A, B, C, D and F, a signalman would be still more liable to make mistakes than he would with only one. It is this danger that the system of interlocking is intended to guard against. It consists of an apparatus for moving the different signals, and arranged in such a way that the movement of one either locks or unlocks others in such a sequence that it is impossible for the signalman to give a signal which would incur danger. Suppose, for example, that in fig. 1 the home signal consists of some form of semaphore or gate, *m F*, which swings across the two tracks on a center, *F*, describing the path *m n* represented by dotted lines. In the diagram it is represented as swung across the track A B, which is therefore blocked, and the line D C is clear."

When it is in this position neither of the signals A and B should be lowered, because if either of them is, it will indicate that the line is clear, when at the same time the position of the home signal shows that it is fouled. The same thing is true of the signals C and D

when F is in the position F n. It is evident then that to prevent the giving of contradictory signals (a), the movement of the home signal from one line to the other should lock the distant signals of the line that is fouled at danger.

When it has been indicated, by the home signal, that one line is clear, then we may want to admit a train from either direction; therefore, (b) the movement of the home signal should release the distant signals on the line that is cleared.

It is plain though that on a single-track road we may want to admit a train from either direction, and that if both distant signals are lowered to indicate line clear, trains might approach from opposite directions and thus cause a collision on the same track. For this reason but one distant signal should be lowered on the same track at the same time, and therefore, (c) on sin-

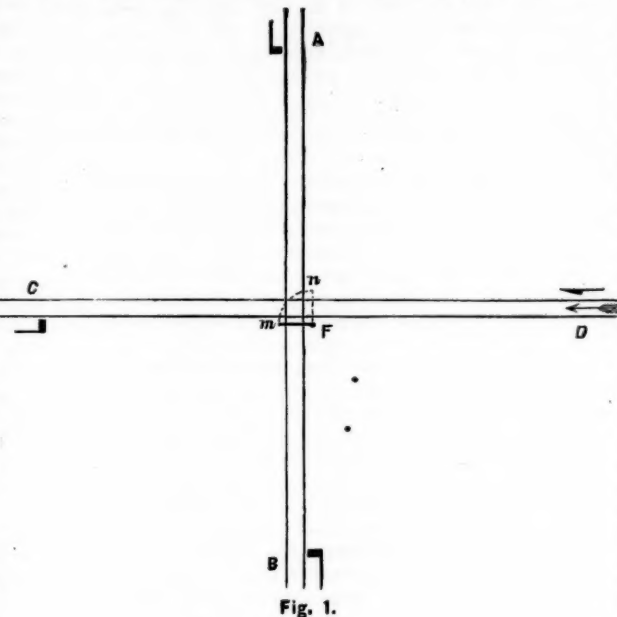


Fig. 1.

gle-track roads the lowering of one distant signal should lock the other, on the opposite side of the home signal on the same track, at danger. On double-track roads this is not required, and the two opposite distant signals may be moved simultaneously.

If, when the signals are in the position represented by fig. 1, a train is to pass from D to C, the distant signal D must be lowered to correspond with the position of the home signal F. If, by mistake, after the distance signal had been lowered the home signal was changed so as to clear the track A B and

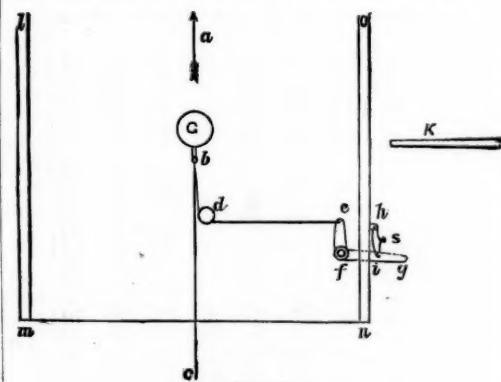


Fig. 2.

block C D, then D and F would give contradictory indications. To guard against this, (d) distant signals must be so arranged as to lock the home signal when any of the former is lowered to indicate line clear.

The four conditions a, b, c, and d printed in italics embrace all the principles of interlocking signals for a railroad crossing which must be observed in the construction of any apparatus with which it will be absolutely impossible to give wrong signals. As explained above, on double-track crossings the condition (c) need not be observed, and this simplifies the apparatus considerably.

There is though still one source of danger unguarded. The necessity for locking the home signal when the distant signal D is lowered has been explained. But it has happened that after the engine of a train has passed the distant signal, but before the train has cleared the crossing, the attendant would quickly raise the signal D, change the position of F, and lower one of the signals A or B on the other track, and thus admit another train. If the latter is running at a higher rate of speed than the former, a collision is very probable. Such accidents are liable to occur in

a fog when the trains are not visible. To guard against them various ingenious devices have been used. Among them are arrangements by which a train, when it reaches one distant signal, locks it, and it is not unlocked until the train passes the crossing. This has been effected mechanically and by electricity. It involves the use of more or less complicated or delicate appliances which require close attention to keep in good working order. A method proposed by the writer, and possibly by others, is to arrange the home signal so as to be moved by gearing, which would require the signalman to turn a crank a certain number of times, and thus consume a definite time before he could change the home signal so as to release the distant signal on the track which should be blocked. This would interpose an interval of time between the admission of a train one on the track, so that the first one, unless moving very slowly, would pass before the second one could be admitted. If the first one were moving very slowly and the home signal was swung across the track in front of it, it could be stopped before reaching the crossing. After the latter was occupied by the train, it would be impossible to swing the gate and thus release the distant signals on the other track. Although this plan would not give absolute safety, it would eliminate the risk from this source to such a degree as to make an accident from that cause almost impossible.

The interlocking system of signals, though, it will be observed, refers only to the giving of signals, and is of little or no help to the observance of them. It makes it sure that the signalman will not make any mistakes, but it does not enforce the observance of the signal on the locomotive runner. The latter may go to sleep or fail to look out, be lost in a fog or be a subject of "pure cussedness," and the interlocking system will not guard against his shortcomings. Much ingenuity has been exercised to secure the same degree of what may be called infallibility on the part of the locomotive runner that interlocking endows the humblest son of St. Patrick with. It must be confessed, though, that these

efforts have not been attended with much success. To enumerate them would take much space and time, more than can be given to them here. In Massachusetts, the inclination of railroad men, and of the Commissioners seems to be to employ some sort of audible signal in conjunction with one which is visible. In Europe, we believe, nearly all contrivances of this kind have been abandoned, and now more reliance is placed on holding men strictly accountable for over-running signals, and at the same time place the distant signals so far away from the point of danger that an accident may be prevented even if the signal is over-run. The difficulty, though, is in knowing whether men observe or violate the rules in this respect. What seems to be needed is some tell-tale which would make a record in case the signals are over-run. On the Hudson River Railroad an additional arm, with more or less flexibility, is used in connection with a semaphore. This is placed just at the right height, so as to strike the cab windows and break them in case the signal is passed when at danger. This gives an unmistakable record and a forcible reminder of the violation of the rules. This method, though, could not readily be used on a single-track road, because the signals which refer to trains going in opposite directions would break windows they were not intended to break.

We give herewith, fig. 2, a sketch of a plan which is proposed and which, it is thought, would meet all the requirements: *l m n o* represents an inverted plan of the roof of a cab. *G* is the ordinary gong and *b c* the bell rope. At the side of the cab a bell crank, *e f g*, is attached by a bolt or pin, *j*. The arm, *e f*, is connected by a cord, *e d b*, which passes around a pulley, *d*, with the gong. *R* represents a semaphore arm, which is placed at the right height and distance from the track, so that when it is raised it will engage with the end, *g*, of the bell-crank; and it will be seen that when the engine is running in the direction of the dart *a*, if the bell-crank should come in contact with a semaphore arm it would pull the cord *e d b*, and ring the gong. On the outside of the cab a staple, *h*, is fastened and the bell-crank is attached to it by a cord or wire, *h i*, which passes through a hole, *i*, in the arm *g f*. This cord or wire is fastened with an ordinary car seal, so that if the former was broken, in case the bell-crank came in contact with a semaphore arm, it would be recorded and revealed.

As has been observed, some method of holding the men to a strict accountability for over-running signals seems to be of more importance than an audible signal. In fact it has been argued that the latter without some

tell-tale is a positive detriment, because the men get into the habit of depending on the warning which they can hear and do not look out for the visible signals.

For a home signal at a crossing, perhaps there is nothing so efficient or so likely to be observed as some kind of gate or bar, which in fact is an enormous semaphore arm which will be broken if an engine passes when the line is blocked. The fact that it is broken if passed gives it a significance in the minds of the men which it would not otherwise have. This always leads to an investigation, too, and thus the men are held to a much stricter accountability than if no injury is done when the home signal is disregarded.

The conditions, then, which an efficient system of signals at a grade crossing of two railroads should fulfill may be summed up as follows:

1. There should be a home signal at the crossing, guarded by distant signals far enough from the point of danger, so that any trains can be stopped in the space between the home and distant signals.
2. They should be made to interlock with each other as specified under the heads (a) (b) (c) and (d) above.
3. The home signal should be locked automatically by the train when it reaches the distant signal and unlocked after the last car has passed the crossing. Or, instead of such appliances, the home signal should be moved by a system of gearing which would require — seconds to change its position.
4. There should be an effective tell-tale on each engine, which would indicate the fact if an engine passed a distant signal at danger.
5. The home signal should be constructed so that it would be destroyed if an engine or car was run over the crossing where it was blocked.

FEBRUARY EARNINGS.

Our table of railroad earnings in February has reports from 46 railroads, while the list had 47 roads in January, 52 in December, 57 in November, 56 in October and 55 in September last. As usual, the number reporting becomes smaller when many roads have smaller earnings, though it is to be said that the roads that have suffered most from the storms have continued to report throughout this winter, a perseverance in which policy will in time teach the public not to lay too much stress on accidents whose effect is temporary. All the important roads that reported for January appear also in the February list, with the addition of Reading.

The 46 roads reporting for February had this year 80,772 miles of road, which is 17 per cent. more than they were working in February last year, and about one-third of the total mileage in operation in the United States. With this increase of mileage their increase in earnings was only 5.2 per cent., their average earnings per mile having fallen from \$533 to \$479, or 10 per cent. It should be remembered, however, that the earnings last year were exceptionally large, traffic being heavy and rates good. Thus in our table of 52 roads there were only three which did not show an increase in total earnings over 1879. This year, out of 46 roads 16 show a decrease in total earnings and 22 a decrease in earnings per mile of road, and included in those showing a decrease are some of the largest systems in the country, such as the Chicago & Northwestern, the Chicago, Milwaukee & St. Paul, the Illinois Central and the Wabash. And the roads which have increased earnings have generally more moderate increases than have been common heretofore recently. Only the Denver & Rio Grande and the Paducah & Elizabethtown have gained as much as 50 per cent. in earnings per mile, and the only others that have gained as much as 20 per cent. are the International & Great Northern (32.6), the Cairo & St. Louis (25.8), and the Alabama Great Southern (23.7 per cent.). On the other hand no less than eight roads show a decrease of more than 20 per cent. in earnings per mile, while five have lost more than 30 per cent., and three more than 40 per cent. (Chicago, Milwaukee & St. Paul, 44.7; St. Paul & Sioux City, 49.4, and Iowa lines of Illinois Central, 43.3 per cent.). The decreases of more than 20 per cent. are, in seven of out the eight cases, on roads that have been badly blockaded by snow; but there are some not to be accounted for in that way, three being on Southern roads. Of these latter no less than 12—an unusually large number—report, three, as we have said, showing a decrease in earnings per mile, three a large increase (Alabama Great Southern, 23.7 per cent.; International & Great Northern 32.6, Paducah & Elizabethtown, 57), and the other six a slight increase.

There are eleven of the roads reporting whose train mileage was greatly reduced in February by the blockading of their roads, and their earnings therefore greatly injured in this way, besides many whose traffic

on parts of their lines was more or less obstructed. If we take these eleven roads by themselves, we will find that in the aggregate they had 8,664 miles of road last year and earned on it \$3,225,021, or at the rate of \$372 per mile. This year, with 11,218 miles of road, they earned but \$2,796,343, or \$249 per mile. With so great an increase of mileage, most of which is in new country, smaller earnings per mile were to be expected, but certainly there would have been some increase in total earnings with this increase of nearly 30 per cent. in mileage if it had not been for the storms, and most certainly not a decrease of nearly 14 per cent., such as we have to chronicle for the month.

But great as is this decrease on the roads referred to, its effect on the total of the roads reporting is comparatively slight, because, though these roads have this year more than one-third of the mileage reporting they have less than one-fifth of the total earnings, being generally roads of light earnings per mile, even in favorable seasons. If we take these roads out of the list, then the totals of the other 33 roads will be:

| | 1881. | 1880. | Inc. or Dec. | P. C. |
|------------------------|--------------|--------------|--------------|------------------|
| Miles..... | 19,554 | 17,608 | I. | 1,946 11.1 |
| Earnings..... | \$11,937,392 | \$10,777,990 | I. | \$1,159,402 10.8 |
| Earnings per mile..... | 611 | 612 | D. | 1 |

Thus on the roads least affected by the snow the increase in earnings has just about kept up with the increase in mileage, so that their earnings per mile were substantially the same in the two years. Of course, the traffic of the roads east of the badly blockaded roads has been considerably reduced by the inability of their Western connections to receive or deliver freight and passengers, and a very large number of the roads we have not included have suffered somewhat directly, as well as indirectly, from the storms. All this is in receipts. In expenses the effect has been greater and more widespread, roads which have hardly missed a train having been put to great expense to keep their roads open. The report that the gross earnings of some Northwestern roads have hardly equalled their expenses is very likely true of some months of the past winter. But, of course, the table published to-day gives no direct clue to expenses or net earnings.

Seven roads report a large share of whose traffic consists of through freight between the East and the West. Only two of these show a decrease, but the increases are small, except that on the Northern Central, which is 15.7 per cent.

The roads with lightest and heaviest earnings per mile this year and last were:

| Smallest: | 1881. | 1880. | Largest: | 1881. | 1880. |
|----------------------------|-------|-------|----------------------|---------|---------|
| St. Paul & S. C. | \$58 | \$72 | Penn. | \$1,629 | \$1,593 |
| Northern Pac. | 111 | 120 | Reading | 1,287 | 1,172 |
| Mem. Pad. & Nor. | 152 | 146 | Northern Cen. | 1,174 | 1,015 |
| Ill. Cen. in Iowa | 178 | 315 | Cin. & Spring. | 871 | 775 |
| St. P., Minn. & M. | 184 | 210 | Belleville Line | 854 | 771 |
| Chic. & Mil. & St. P. | 187 | 339 | Iron Mt. | 800 | 747 |
| P., Dec. & Ev. | 194 | 171 | C., C. & Ind. | 694 | 716 |

Below we give our usual table of February earnings per mile of road since 1873 from as many roads as possible:

| | 1874. | 1875. | 1876. | 1877. | 1878. | 1879. | 1880. | 1881. |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Bur. C. R. & N. | \$181 | \$187 | \$250 | \$185 | \$357 | \$294 | \$336 | \$321 |
| Cairo & St. L. | 104 | 106 | 133 | 154 | 93 | 119 | 178 | 217 |
| Can. Pacific | 580 | 643 | 715 | 636 | 470 | 451 | 455 | 514 |
| Chi. & Alton | 689 | 697 | 815 | 491 | 443 | 451 | 492 | 532 |
| Chi. & E. Ill. | ... | ... | ... | 350 | 390 | 380 | 534 | 513 |
| C. M. & St. P. | 470 | 291 | 370 | 276 | 473 | 276 | 339 | 187 |
| Chic. & N. W. | 361 | 474 | 391 | 522 | 413 | 507 | 494 | 346 |
| C., P. M. & O. | ... | ... | ... | ... | ... | 263 | 354 | 329 |
| St. P. & S. C. Div. | 160 | 104 | 248 | 178 | 257 | 202 | 172 | 188 |
| C., C. & Ind. | 749 | 653 | 842 | 945 | 552 | 650 | 747 | 694 |
| H. & Tex. Cen. | 482 | ... | ... | 527 | 435 | 409 | 572 | 428 |
| Denver & R. G. | ... | ... | 254 | 149 | 181 | ... | 381 | 577 |
| E. T. Va. & Ga. | ... | ... | ... | 209 | ... | ... | 298 | 388 |
| Flint & P. M. | 321 | ... | ... | ... | ... | 278 | 409 | 401 |
| H. & St. Jo. | 482 | 393 | 527 | ... | ... | ... | ... | ... |
| H. & Tex. Cen. | ... | ... | ... | 375 | 408 | 428 | 529 | 561 |
| Ill. Cen. in Ill. | 599 | 586 | 810 | 549 | 435 | 432 | 558 | 459 |
| Ill. Cen. in Iowa | 236 | 169 | 133 | 249 | 327 | 245 | 315 | 178 |
| Ind. & W. | 381 | 284 | 415 | 272 | 495 | 391 | 425 | 393 |
| Mo. & St. Nor. | 351 | 251 | 254 | 264 | 217 | 245 | 298 | 334 |
| Louis. & Nash. | 559 | 469 | 446 | 448 | 431 | 443 | 619 | 437 |
| Mem. & Charles | ... | ... | ... | 336 | 318 | ... | 350 | 380 |
| Mem. P. & Nor. | ... | ... | ... | 162 | 115 | ... | ... | ... |
| Mobile & O. | 413 | 296 | 338 | 331 | 328 | 337 | 403 | 418 |
| Nash. C. & St. L. | ... | ... | 474 | 426 | 441 | 453 | 421 | 409 |
| Northern Cen. | 985 | 915 | 914 | 888 | 693 | 889 | 1,015 | 1,174 |
| Pad. & Eliz. | ... | ... | 143 | 143 | 118 | 139 | 219 | ... |
| Penn. & Reading | 1,571 | 1,399 | 1,436 | 1,231 | 1,311 | 1,421 | 1,723 | 1,629 |
| P. & Reading | 1,017 | 877 | 692 | 842 | 603 | 1,096 | 1,172 | 1,297 |
| St. L. A. & T. H. | ... | ... | ... | ... | ... | ... | ... | ... |
| Belleville Line | 528 | 786 | 558 | 518 | 495 | 622 | 771 | 854 |
| Main Line | ... | ... | ... | ... | ... | 342 | 559 | 593 |
| St. L. I. Mt. & S. | ... | 419 | 456 | 515 | 490 | 493 | 716 | 800 |
| St. L. & San Fran. | 423 | ... | 349 | 321 | 253 | 293 | 781 | 294 |
| Scioto Valley | ... | ... | ... | ... | ... | 278 | 264 | 229 |
| W., St. L. & Pac. | ... | ... | ... | ... | ... | 489 | 490 | 330 |

In examining such a table, of course, it must be remembered that there have been great changes in many of the roads, chiefly by additions to their lines. Where the additions have been newly constructed roads, and in most cases where they have been bankrupt roads purchased or leased, the additions had much lighter earnings per mile than the company acquiring them, and, though perhaps very profitable on the terms acquired, have reduced the average earnings per mile. Roads which have been very greatly changed by additions, more or less profitable, are the Central Pacific (which leases and works the Southern Pacific), the Chicago & Northwestern, the Chicago, Milwaukee & St. Paul, both lines of the Chicago, St. Paul, Minneapolis & Omaha, the Denver & Rio Grande, the Louisville & Nashville, the St. Louis & San Francisco, and the Wabash, St. Louis & Pacific. The latter has been so greatly changed that we do not

give its earnings per mile previous to 1879, when it was working scarcely one-fourth of its present mileage, and those which we do give are for only 1,218 miles in 1879, against 2,300 and 2,470 in the two following years.

Of the 35 roads in the above list reporting for 1880 and 1881, 18 had larger earnings per mile this year, and these earnings were larger in 1881 also on 23 out of 33 roads than in 1879, on 19 out of 29 than in 1878, on 19 out of 29 than in 1877, on 9 out of 23 than in 1876, on 14 out of 20 than in 1875, and on 10 out of 21 than in 1874. No less than 14 of the 35 roads, in spite of the bad weather, had larger earnings per mile this year than in any other February for which their earnings are given, while only six have smaller earnings this February than in any previous. This result is very good evidence that traffic and rates have been favorable the past winter, to earnings at least as large as ever before, and probably larger, and that it is the unfavorable weather alone that has prevented. On this account we are justified in expecting positively large earnings for some months to come, dependent on some roads to a considerable extent on the rates that will be made on the lakes after navigation opens. As to this, it can only be said that the vessels' owners at this time are asking more than the opening rate last spring (which was the highest for many years).

March, however, will be for several roads the worst of the season, the blockade having been more severe and lasting longer, so we may not expect to get favorable returns from that month.

For the two months ending with February we have reports from 49 roads, which, with 17.3 per cent. more mileage, earned 7.9 per cent. more this year than last; their average earnings per mile of roads having decreased from \$1,053 to \$969, or 8 per cent. The roads reporting are for the most part the same as those reporting for February, and the circumstances affecting traffic were very much alike in both months. Of the 49 roads reporting, 13 show a decrease in total earnings, and 19 a decrease in earnings per mile. The large increases are 35.8 per cent. on the Cairo & St. Louis, 51.1 on the Denver & Rio Grande, 95.5 on the Indianapolis, Decatur & Springfield, 52 on the Lake Erie & Western, and 32.1 on the Paducah & Elizabethtown. The largest decreases are 33.3 per cent. on the Chicago, Milwaukee & St. Paul, 27 on the Burlington, Cedar Rapids & Northern, and 29.7 on the St. Paul & Sioux City Division of the Chicago, St. Paul, Minneapolis & Omaha. The heaviest earnings per mile for the two months this year are \$3,307 on the Pennsylvania and \$2,358 on the Northern Central—on no other so much as \$2,000. The smallest earnings per mile are \$268 on both the Northern Pacific and the St. Paul & Sioux City, and \$317 on the Memphis, Paducah & Northern. The largest are thus more than twelve times as great as the smallest. The two Canada roads, though they have suffered much from snow, show slight gains in earnings, as do all the other roads that have a large share of the through traffic, except one. There is but one New England road in the list, and no New York road, but the lines reporting are pretty well scattered over the rest of the country, and the total probably reflects pretty well the average condition of railroad business.

WHO ARE FELLOW-SERVANTS?

In two articles published in January, 1880, the *Railroad Gazette* gave a careful explanation of the general principles underlying the liability of a company to employees for personal injuries, namely, that the employé is understood to take the risk of negligence on the part of his fellow-servants, and for this the company is not liable; but that it may be liable for neglect by the directory of proper corporate duties, or for fault or neglect of superior officers or agents—those who may be regarded as representing the company toward the injured employé, rather than as co-operating with him in his particular service. Questions in this field grow rapidly more perplexing as railroad service expands and becomes more complex. Thus the court reports of a year past contain many decisions upon the question: Who may be regarded as fellow-servants? And it is a question not easily covered by a general rule. The peculiar duties and functions assigned to the employé have to be considered; and these vary somewhat, not only from time to time, with the general development of the service, but also under the regulations, and even the unformulated usages, of the different roads. On some subjects, to understand the general principle is enough; it is easily applied to new cases as they arise. On the questions who are fellow-servants—what persons are deemed to be in the same employment—there is peculiar use in taking notice how special cases are from time to time decided.

Whether the foreman, "boss," or superintendent of a special gang of hands detailed for a particular job is a fellow-servant of the hands working under his direction, so that they are deemed to take the chances of his neglect, has been presented in several cases. The story of one was that the Delaware & Hudson Canal Company placed one Brown, as "section boss," in charge of about five miles of railroad track; and he worked with, and also served as foreman of, the laborers employed in keeping that portion of the road in repair. He had charge of the tools and machinery used in this track-repairing, and was considered responsible to the company for their good usage and return. He had some authority—to what precise extent was not clearly shown, although in other cases this has been deemed a controlling fact—to hire the hands needed for the work under his charge. On the other hand, he was himself subject, not immediately to the directors, nor even to the superintendent, but to an intermediate track-master. The entire track was divided into sections, each section was in charge of a section-boss—Brown being one of these—while the whole was under the track-master's supervision. This track-master employed the various section-bosses, and, to a considerable extent, at least, hired the men, and he furnished the tools and machinery necessary. All reports by the section-bosses were made to this track-master; the foremen being subject to him, and bound by his orders. The usage was that if new tools were required or old ones needed repair, the foreman of the section reported the want to the track-master, and he supplied what was considered needful. The work being thus organized, a hand-car in use by Brown's gang of men fell out of repair. Brown was notified of the defect; and, in the strict discharge of his duty, should have complained of it to the track-master, and obtained the proper direction for sending it to the shop for repairs. He neglected doing this, however, and the defect led to one of the men being thrown from the hand-car and badly injured. There was no dispute that Brown was, generally speaking, a competent man for boss, and that the direction had properly discharged the corporate duty of appointing suitable agents and providing suitable apparatus in the first place. But, on the theory that Brown represented the company, and the corporation was therefore chargeable with his specific neglect to inspect the hand-car, a suit was brought. The New York Supreme Court decided that Brown could not be considered as representing or standing in the place of the company. He was an employé just as was the injured workman. Both men were in the same circle of employment; they worked together for a common purpose. Brown's limited authority to direct the action of, or even to hire, the hands was not cause sufficient to take the case out of the rule that men employed to work together take the risks of each other's negligence. Above Brown was a track-master, and above the track-master was a superintendent, either of whom, probably, could have discharged or hired any section-foreman at will. Clearly, therefore, Brown's position was that of an employé merely.

In striking contrast with this is a Wisconsin decision where the man hurt was one of a gang of laborers who were in the general employ of the Chicago, Milwaukee & St. Paul Railway Company, as crew operating a pile-driver. The pile-driver, the crew and their foreman were temporarily turned over to a contractor with the company, to do a job for him upon the erection of a bridge which was his private enterprise. The pile-driver was in bad repair, owing to the negligence of the foreman in failing to send it to the repair shop, and one of the crew was injured in consequence. It appeared that the foreman was distinctly charged with the duty of inspecting and directing repairs of the machine; and also that he was invested with the authority to hire and discharge men to work it. The Court held that the corporation owed to the crew of the pile-driver the obligation of keeping up inspection and repairs, and that, as it had intrusted that duty to the foreman, the neglect of it by the latter was negligence of the corporation, and was not negligence of a mere fellow-servant. But upon the whole, the tendency of recent decisions is that giving a servant some authority as "boss" over a few others is not enough to render the company liable to them for his neglect; but he must occupy a really superior position.

Whether those employed in running trains are fellow-servants with those in charge of or at work on the track, so that the company is exempt from liability to a person of one class for the negligence of one belonging to the other, has been discussed in four recent cases. In one of the instances a road-master, generally competent and attentive, went away from his post on the business of the road, and, according to usage,

left the switches in a short section of the road in charge of a section-man. This section-man, finding one of the switches somewhat out of order, repaired it, and, after so doing, by mistake left it misplaced. In consequence of this displacement, a freight train soon afterwards passing was thrown off the track, and the engineer and fireman were killed. The Court pronounced this a simple, ordinary case of an injury received through the negligence of a fellow-servant for which the company was not liable. In the other three instances it was the track-man who sustained injury through the negligence of a train-hand. In one of these cases, a section-man was running a hand-car over his section, in the execution of the duty of inspecting the track, when a paymaster's car coming from the rear, by the gross mismanagement of the engineer, ran over the hand-car, and one of its occupants was killed. The Maine Supreme Court considered that the company was not liable, saying that the employer cannot be sued by one servant for the negligence of another, if the two are employed to further the same object. That the two were not engaged in the same kind of work, or even that one had authority over the other, does not create an exception to the rule. In a second instance, a gang of track-repairers was engaged in repairing the road-bed on the Chicago & Northwestern road, when an express train, running at about 35 miles an hour, approached. The track-repairers stepped off the track and stood on one side to allow the train to pass. As it was passing, the firemen, upon the tender, tossed a large lump of coal in so careless a manner that it struck the foreman of the gang and killed him. The Court said that the track-repairers and the engineer or fireman were not fellow-servants, and that the company must pay damages. The opinion states that the English rule on this subject has been (this was said before the enactment of the law extending liability) more favorable to employers than the rule generally prevailing in America, and particularly than that established in Illinois. In that state, a number of decisions have established two exceptions to the general rule as to fellow-servant; one where the servant injured is a subordinate of the negligent servant, and the other where the employments of the two are disconnected. In these two cases the master may be held liable. In the third instance—also an Illinois case—the facts were much like those in the Maine case just mentioned. Track-men were returning to the station, on a hand-car, from a spot where they had been to replace a broken rail. An engine driving a snow-plow came over the road, being carelessly managed, and without any proper lookout or signals. The track-men lifted their hand-car off the track far enough to clear the engine or an ordinary car, but not far enough to clear the snow-plow. The snow-plow struck the car and dashed it against one of the men, who was killed. The Court adjudged the engineer and the track-men not to be fellow-servants; and said that an action for damages would have been maintainable if it had not been that, under the circumstances, the hand-car men were chargeable with contributive negligence in not lifting the hand-car further from the track.

The contradiction between this and the Maine decision—one holding that track-men and train-men are fellow-servants, and the other that they are not—may be explained by considering that the laws of Illinois and of Maine differ; Maine adhering somewhat to the former English rule, and Illinois, as above explained, adopting a rule more liberal toward employés. The subject is one on which different states have the right to maintain, either by their legislatures or by their courts, different rules, if they see fit. Or it may be possible to maintain a distinction between hands employed to inspect the track in connection with the running of trains and those employed to rebuild and repair it; and to say that inspection is a part of the same general employment with the operation of trains, while the making of substantial repairs is not so. It might with good reason be considered that the original construction of the road-bed and track and the subsequent running of trains are entirely distinct employments; the laborers who lay the ties and track in the first place are not fellow-servants of the engineer, conductor and fireman afterward employed in using the road. This being clear, it follows that there is a delicate and difficult line to be drawn somewhere. Perhaps the best place to draw it is to say that inspecting the road after the train has passed, to report whether it has done injury, is part of the same general employment with running the road, and whoever is employed in this duty is a fellow-servant of the train-hands; but that supplying defects and restoring the road, when damaged, to a useful condition, is part of the same general employment with the original construction, and is disconnected from the service of running trains.

A Massachusetts case may be noteworthy, in which

one who claimed the benefit of the rule lost it because the injured person, on the facts, was not in the defendant's service at all. A builder of locomotives employed a teamster to transport an engine from the builder's shop to the railroad station. The teamster with his team and servants came to the shop to do this hauling. After the engine was loaded upon his truck, he falsely represented to one of the builder's workmen, who had been assisting, that the builder had promised to send a man along with him to aid in unloading at the station. Induced by this falsehood, the workman addressed consented to go; and, in unloading at the station, he was injured through the negligence of one of the teamster's assistants. The teamster disputed being liable, for he said the two men were fellow-servants. But the Court said that the man hurt was not the teamster's servant; he was the servant of the builder, and had gone in that capacity, although led to do so by false representations.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Shenandoah Valley.—Completed by laying track from Millford, Va., south by west to near Grove Hill, 28 miles.

Elizabeth City & Norfolk.—The first track is laid from Norfolk, Va., southward 7 miles, and from Elizabeth City, N. C., north 5 miles.

This is a total of 40 miles of new railroad, making 541 miles thus far this year, against 795 miles reported at the corresponding time in 1880, 298 miles in 1879, 223 miles in 1878, and 165 miles in 1877.

THE GRAIN MOVEMENT shows a very decided revival, in spite of the obstructions to railroad traffic, which have greatly reduced receipts at Chicago and Milwaukee throughout the month of March (but have probably somewhat increased receipts at more southern Western markets, and also shipments through by rail). This will be shown by the following statement of the movement of successive weeks:

| Week ending— | Northwestern Receipts. | Shipments. | Atlantic Receipts. |
|--------------|------------------------|------------|--------------------|
| Feb. 19..... | 1,294,188 | 1,433,421 | 3,197,435 |
| " 26..... | 2,391,492 | 1,686,909 | 3,427,219 |
| March 5..... | 2,757,801 | 1,564,350 | 3,456,497 |
| " 12..... | 2,505,482 | 1,649,551 | 3,367,379 |
| " 19..... | 3,040,937 | 2,549,402 | 4,122,442 |

This is the latest date for which we have reports from the seven Northwestern markets and the seven Atlantic ports; but for the week ending March 25, receipts at the four leading Eastern ports were 4,554,551 bushels, though Chicago and Milwaukee receipts continued very light, indicating very large through rail shipments. Last year the movement in March and April to the seaboard was the largest ever known by rail, and it will not be nearly equalled this year, but mainly because it began later, for the indications are that the Atlantic receipts for the last half of March will be nearly as large as the extraordinarily large ones of last year, which were stimulated, it should be remembered, by a reduction in the rate from 40 to 35 cents per 100 lbs. on the 1st of the month. This year the winter rate was 5 cents lower than last year, and there has as yet been no reduction, so that the March rate was the same in both years. On the other hand, lake navigation was expected to open early in April last year, and this expectation tended to make merchants hold back grain to get the advantage of low water rates. This year no one seems to venture a guess as to the opening of the lakes, the ice being about as sound as ever at the Straits; but a few days of warm rain followed by winds in the right direction will make short work of it. In the past 27 years there were but three when the Straits opened as late as May—twice on the 1st and once on the 2d. Last year the opening was April 3. About April 21 is the average time. The blockade of Northwestern roads has lasted so long that there are likely to be unusually heavy shipments by them in April, which will tend to stiffen opening lake rates and put off the time when it will be necessary to reduce the rail rates to the East. The Chicago & Milwaukee receipts on Tuesday last were the first for a long time that have been normally large. They were several times as great as the average receipts for many days previous, and this probably is the first day of a period of heavy receipts.

THE NEW ROUTE TO THE PACIFIC, we said in a note recently, uses 1,208 miles of the Southern Pacific, from San Francisco to Deming. This distance we gave on the authority of the December time-table, which made Deming that distance from San Francisco and 10 miles east of a station called "Rio Mimbres," on the stream of that name. But the time-table of March 19 shows Deming 1,197½ miles from San Francisco, while Rio Mimbres has disappeared entirely from the list of stations; and yet there was no error in either time-table. The explanation will show what difficulties are met by the American geographer. It was announced several months ago that the junction of the Southern Pacific with the Atchison, Topeka & Santa Fe would be at Deming, and the public had pretty well learned that. But when the latter company completed its surveys it found there was no water at Deming, and as water is indispensable at a terminus, to supply engines, it decided that it would have to make the junction at Rio Mimbres. But as there was nobody at either station to cling to the name, and the public had been taught that Deming would be the junction station, the greatest good of the greatest number was secured by transferring the name Deming to what was Rio Mimbres, and blotting Rio Mimbres,

as a station, off from the face of the earth, even as the stream itself disappears in the thirsty earth after a course of a few miles.

The Southern Pacific time-table shows three trains each way daily to and from Deming. The "New Mexico express," the passenger train connecting with the Atchison, Topeka & Santa Fe, leaves San Francisco at 8.30 a. m., Los Angeles at 7 a. m. the next day, Yuma (Colorado River) at 7 p. m. the same day, Tucson the next morning at 6 a. m., and arrives at Deming at 5 p. m., 56½ hours after leaving San Francisco, which gives an average speed of 21.2 miles per hour. The express train on the Central Pacific makes the 895 miles from San Francisco to Ogden in 48 hours, which is at the rate of 18.6 miles per hour. Besides the express, the Southern Pacific time-table shows (for the line from Yuma to Deming) a freight and emigrant train running about 12 miles an hour and a freight train whose speed is about 11 miles an hour.

PENNSYLVANIA RAILROAD EARNINGS IN FEBRUARY, on all lines east of Pittsburgh and Erie, were 5.1 per cent. larger this year than last, but the expenses were 13.2 per cent. greater, and there was a decrease of 6 per cent. in the net earnings. The earnings, expenses and net earnings in February for the last five years have been:

| Year. | Gross earnings. | Expenses. | Net earnings. |
|-----------|-----------------|-------------|---------------|
| 1877..... | \$2,165,690 | \$1,461,646 | \$704,044 |
| 1878..... | 2,162,000 | 1,418,009 | 744,000 |
| 1879..... | 2,538,039 | 1,365,053 | 1,172,986 |
| 1880..... | 2,944,596 | 1,712,394 | 1,232,182 |
| 1881..... | 3,095,014 | 1,937,510 | 1,158,104 |

The gross earnings were thus larger this year than in any other February, but the increase in expenses was such as to make the net earnings less than in 1880 or 1879, though very much greater than in 1878 and 1877.

The net earnings, however, are positively large, and in view of the exceptionally large expenses are entirely satisfactory.

For the two months of the year the earnings and expenses have been.

| Year. | Gross earnings. | Expenses. | Net earnings. |
|-----------|-----------------|-------------|---------------|
| 1877..... | \$4,549,205 | \$3,117,890 | \$1,431,375 |
| 1878..... | 4,559,305 | 2,936,306 | 1,622,999 |
| 1879..... | 5,081,404 | 2,899,146 | 2,182,258 |
| 1880..... | 6,028,128 | 3,429,848 | 2,598,280 |
| 1881..... | 6,284,830 | 3,920,065 | 2,364,765 |

The February earnings were nearly as large in February as in January, and the expenses were less, and of the decrease of \$233,515 in net earnings for the two months, more than two-thirds was in January.

February is the last month in which employees' wages were lower last year than this, and hereafter we may not expect to see expenses much larger this year than last, except when caused by heavier traffic or other similar causes.

THE CHICAGO & IOWA LITIGATION has resulted in an injunction which recalls the early "chapters of Erie." One of the parties to the litigation (the town of Aurora) claims to own all the stock that is valid, and on that basis chose a board of directors to suit itself, at a time when the road was in the hands of a Receiver. The Receiver having paid off the creditors' dues, the road was at one time turned over to this board, but within two days another court put it back into the Receiver's hands, on petition of other parties claiming to hold a majority of the valid stock. There it has remained since; but on Feb. 26, about a week before the time for the regular annual election, this same party (known as the Hinckley party, Mr. F. E. Hinckley, who built the road, being the chief owner of the stock in question) applied to the Circuit Court of Ogle County, Judge Eustace, to enjoin the voting of the Aurora stock at this election. This Judge not only enjoined the voting of this stock, but he enjoined the town and its representatives from selling or transferring the stock, and from bringing suit to set aside the appointment of the Receiver, and from appealing from this decision! It is reported that a resolution will be introduced into the Illinois House of Representatives for an investigation of this case with a view to impeaching the Judge.

THE POOLING OF EAST-BOUND FREIGHT, which it was agreed at the meeting March 11 should be made over the trunk lines and their immediate connections, has been partly prepared for by meetings of representatives of the trunk lines. A plan has been drawn up, we understand, which provides for making a division not only of the total east-bound shipments, but of those to each destination, with arrangements to secure the "evening" of the business monthly. It is intended to have the division date from April 1, to base it generally on the business of a preceding year, dating to a month not far from this date, and to make it binding for a series of years, with provisions for revision in case there should be any permanent change of circumstances, such as the construction of new feeders or outlets. All this, it must be remembered, is in the nature of suggestions generally agreed to in the preliminary discussions, which have yet to be formulated and submitted to the officers who have authority to commit their companies to it.

THE CONDITION OF THE WINTER WHEAT CROP has been investigated by the Cincinnati Price Current, which finds an increase in acreage in all the principal winter wheat-growing states, and a better condition than last year in Ohio, Illinois, Missouri and Kansas, and a poorer condition in Indiana and Michigan. These states raise by far the larger part of all the winter wheat produced in the West. The inquiries were made so early that in the northern districts very little could be known, the snow not having cleared off yet. Snow, if it holds on well, is favorable to the crop. It is alternate freezing and thawing in winter that kills the wheat, and there is still room for damage from this in part of the country. The production in Northern Illi-

nois, Wisconsin, Minnesota, Iowa and Dakota is insignificant. It is spring wheat that is raised there, and that is not sown yet, nor is the ground plowed for it generally, and the sowing must be later than usual.

"THE FALLACIES OF THE ANTI-MONOPOLY LEAGUE," which we copy from *The Nation* this week, is a most valuable contribution to the discussion of the railroad problem. Its chief feature is showing to what an extent the risks of railroad investments and the years when profits were below the average must be taken into account in any equitable estimate of what reasonable profits are—a matter which was specially considered in our issue of Feb. 23, 1874, under the head of "What are Reasonable Profits?" but which has needed discussion before the great public of railroad users, and which has hitherto hardly got it at all. The very great consideration which *The Nation* deservedly commands among the most influential leaders of public opinion will insure attention to this article from leading editors and public men, and in this way it may reasonably be expected that it will have a good deal of effect.

THE LAST SNOW BLOCKADE seems to have been the severest of the winter, though less extended than some. From Chicago west to some distance beyond the Mississippi, and from Milwaukee a less distance west, the roads seem generally to have been blocked five to six days, trains getting through generally last Friday. To show the contrast with last year it is mentioned that at Lake Geneva, Wis., the little steamer made the first trip of the season on the lake March 23, while on that date this year the lake was covered with 30 in. of ice and two feet of snow, and the first train for five days reached the town. Tuesday came another heavy snow, but not serious west of Chicago.

THE NEW MAINE RAILROAD TAX LAW, which we published last week, follows throughout the recommendations of the committee of state railroad commissioners, of which Mr. Adams was chairman, in its report on the subject, which we published two or three years ago. Maine is the first state to adopt these suggestions, though they were substantially in force in two other states before the committee reported. In other states this year bills have been offered in which the chief feature recommended in the report—basing the taxes on the gross earnings—was embodied, but we do not know that any of them have become laws.

NEW PUBLICATIONS.

Dr. C. J. Kenworthy, a physician formerly resident in New York, but now in Jacksonville, Fla., read a paper recently before a medical society in Jacksonville on the "Climatology of Florida," which is a quite elaborate discussion of the climate of Florida, and of its effect on invalids suffering from various diseases, with comparisons with the climates of other health resorts. The Savannah, Florida & Western Railway Company has had a large edition of this pamphlet printed, believing that its study by physicians and invalids will result in an increase in Florida travel. Any person wishing a copy will be supplied free of cost, on application to Mr. James L. Taylor, Savannah, Ga., the General Freight and Passenger Agent of the company.

Mr. Marshall M. Kirkman, we are informed, has nearly ready for the press a new book, treating of baggage, mail, express and parcels traffic, which is intended to take the place of his work entitled, "Baggage Car Traffic," but will include only a part of the contents of that book, the edition of which is nearly exhausted.

Index to Library of American Society of Civil Engineers.—The American Society of Civil Engineers has begun the preparation and publication of an index to its library. Part I. of this index, covering the subject of "Railroads," has just been published. It covers 187 octavo pages, and is called a "preliminary index." Pages 5 to 64 are devoted to indexing publications under the title of the railroads to which they relate, consisting chiefly of prospectuses, reports of surveys, etc., and especially of annual reports. As might be expected, it is especially rich in reports of surveys, which very frequently have a great direct practical value now, as when there is an investigation or preliminary survey for a road through the country in which old surveys were made. The library contains a large number of early annual reports, such as are very difficult to find now, and sometimes have great interest as showing the early experiences of what are now well established enterprises. Thus it has reports of the Baltimore & Ohio for 1828, 1831, 1837, 1839, 1846, 1847 and 1850, as well as all the later ones down to 1873, when they stop. It will suggest itself, we hope, to railroad officers that this library will be an excellent place to preserve complete files of their reports; therefore the name of the "American Society of Civil Engineers" should be put on the list of addresses to which this document is sent regularly. It may be worth little this year: twenty years from now it may be invaluable, and it must be remembered that there are very few places where such pamphlets will be preserved. (One other we will mention now: it is the Wisconsin Historical Society, which makes a specialty of preserving pamphlets.) Other pamphlets about the Baltimore in the Society's library are Ellet's report on the location of the Western portion of the line, made to the city of Wheeling, a review by Ellet and Jonathan Knight of Mr. Latrobe's location of the line recommended in 1849, and Mr. Latrobe's reply to this review (1850); a great number of speeches, reports of investigations, etc., and finally a bibliography of the Baltimore & Ohio Railroad from 1827 to 1879. The file of Pennsylvania Railroad reports is quite incomplete, and there are not many other publications con-

cerning this road in the library. The titles under "New York & Erie" cover three pages, but there are only five under "Erie" (six annual reports given under one), which, in its day, was more written about, probably, than any other three American railroads. That there are none under "New York, Lake Erie & Western" is probably due to the fact that the catalogue was completed some time ago. There are but ten titles (with five annual reports) under New York Central, seven (besides three annual reports) under Hudson River, including the report of the Committee on Railroads in 1843 on the bill to incorporate the company; John B. Jervis' report (1846) on the project, and his report on the location between Fishkill and Albany, and on the prospect of the enterprise (1848). Under New York Central & Hudson River there is not one title! This is largely explained by the fact that, being a consolidation, the reports of surveys come under other titles, and the company does not usually publish any annual report, the one copied so widely being that made to the State Engineer and Surveyor. But we have already dwelt too long on this division of the catalogue. The second division is an index of authors, occupying pages 65 to 106, and the third (pages 107 to 186) an index of subjects, in which, of course, the chief value of the catalogue, to engineers at least, will consist. It includes everything except the works indexed under companies' names in the first division, including what is, perhaps, the most valuable portion of railroad literature in our language, namely, the papers on subjects relating to railroads which are contained in the transactions of the various engineering societies—the American Society of Civil Engineers, the American Institute of Mining Engineers, the (English) Institution of Civil Engineers, the Institution of Mechanical Engineers, the (Scottish) Institution of Engineers, the (English) Society of Engineers, and the Professional Papers on Indian Engineering, besides the abstracts of foreign papers issued by the Institution of Civil Engineers. In these papers, and especially in the transactions of the Institution of Civil Engineers, many matters relating to the construction and working of railroads may be found treated at considerable length and frequently with great ability and by men of wide experience and great reputation, concerning which there is scarcely anything said in any English books.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:
Lake Shore & Michigan Southern, annual meeting, in Cleveland, O., May 4.
Michigan Central, annual meeting, in Detroit, Mich., May 5.

Dividends.

Dividends have been declared as follows:
Cincinnati, Indianapolis, St. Louis & Chicago, 1½ per cent., quarterly.
Delaware, Lackawanna & Western, 1½ per cent., quarterly, payable April 20.
Lake Shore & Michigan Southern, 2 per cent., quarterly, payable May 2.
Michigan Central, 1½ per cent., quarterly, payable May 2.
Oregon Railway & Navigation, 2 per cent., quarterly, payable May 2.
Utica & Black River, 2 per cent., semi-annual, payable March 30.

Foreclosure Sales.

The Galveston, Brazos & Colorado road was sold in Philadelphia, March 29, under a deed of trust, and bought in for \$5,000 by Charles S. Hinchman, of Philadelphia, for account of the bondholders. The mortgage was for \$100,000. The road is of 3 ft. gauge and extends from Galveston, Tex., west 15 miles. It has never been regularly worked, though built several years ago, but has done a little business hauling sand.

Boston & Albany Mutual Relief Association.

At the annual meeting in Springfield, Mass., March 23, the reports showed 580 men on the rolls. During the year there were 13 deaths and the amount paid for insurance was \$7,830. The assessment (\$612) due at the death of President D. Waldo Lincoln was, at his previously expressed request, added to the guarantee fund, which now amounts to \$1,400.

ELECTIONS AND APPOINTMENTS.

Boston & Albany Mutual Relief Association.—At the annual meeting in Springfield, Mass., March 23, the following trustees were chosen: C. O. Russell, W. H. Stearns, Robert Eccles, H. C. Hamilton, J. W. Clark, A. S. Bryant, E. W. Brown; Secretary, Albert Hoyt.

Boston, Hoosac Tunnel & Western.—The office of Mr. E. M. Leuffer, Chief Engineer, has been removed from Hoosac Falls to Mechanicsville, Saratoga County, New York.

California Southern.—Mr. Joseph O. Osgood is Chief Engineer, with headquarters at San Diego, Cal. The road is to be a branch of the Atlantic & Pacific.

Chicago, Burlington & Quincy.—At the annual meeting in Chicago, March 30, the old board was re-elected, Mr. Wirt Dexter, of Chicago, being chosen in place of J. M. Walker, deceased. Mr. Dexter was Mr. Walker's law partner, and has succeeded him also as General Counsel of the company.

Chicago Railroad Association, Passenger Department.—At a meeting held last week the following officers were chosen: President, James Charlton, Chicago & Alton; Vice President, W. P. Johnson, Lake Shore & Michigan Southern; Secretary, W. S. Van Bergen, Chicago & Northwestern; Executive Committee, A. V. H. Carpenter, A. H. Hanson, H. C. Wentworth.

Cincinnati, Union & Northwestern.—The officers of this new company are: President, J. E. Donnellon; Secretary, A. Frank; Treasurer, J. Zebring. Office in Germantown, Ohio.

RAILROAD EARNINGS IN FEBRUARY.

| NAME OF ROAD. | MILEAGE. | | | | | EARNINGS. | | | | | EARNINGS PER MILE. | | | | |
|----------------------------------|----------|--------|-------|------|-------|------------|------------|------------|-----------|---------|--------------------|--------|-------|------|-------|
| | 1881. | 1880. | Inc. | Dec. | P. c. | 1881. | 1880. | Increase. | Dec. | P. c. | 1881. | 1880. | Inc. | Dec. | P. c. |
| Ala. Gt. Southern | 290 | 290 | | | | \$ 63,291 | \$ 51,227 | \$ 12,064 | | | \$ 218 | \$ 177 | \$ 41 | | 23.7 |
| Bur. Cedar Rap. & No. | 504 | 492 | 72 | | 14.6 | 124,510 | 105,171 | 19,339 | | | 247 | 221 | 26 | | 11.8 |
| Cairo & St. Louis | 146 | 146 | | | | 31,651 | 25,303 | 6,348 | | | 217 | 173 | 44 | | 25.4 |
| Central Pacific | 2,723 | 2,350 | 373 | | 16.4 | 1,400,000 | 1,070,487 | 329,513 | | | 514 | 455 | 59 | | 13.0 |
| Chi. & Alton | 840 | 840 | | | | 461,641 | 497,013 | 35,372 | | | 550 | 592 | 42 | | 7.2 |
| Chi. & Eastern Ill. | 227 | 159 | 68 | | 42.5 | 116,396 | 83,265 | 33,131 | | | 513 | 524 | 11 | | 2.1 |
| Chi. Mil. & St. Paul | 3,650 | 2,182 | 1,468 | | 67.3 | 683,000 | 738,749 | 55,749 | | | 187 | 339 | 152 | | 44.7 |
| Chi. & Northwestern | 2,770 | 2,289 | 481 | | 20.9 | 957,300 | 1,131,683 | 174,383 | | | 346 | 494 | 148 | | 30.2 |
| Chi. St. P. Minn. & O. East Div. | 310 | 260 | 50 | | 19.2 | 101,965 | 92,044 | 9,921 | | | 329 | 351 | 22 | | 7.1 |
| St. P. & S. C. Div. | 620 | 470 | 150 | | 31.9 | 54,673 | 81,034 | 26,361 | | | 88 | 172 | 84 | | 49.4 |
| Cin. Ind. St. L. & Chi. | 390 | 300 | 90 | | | 160,981 | 172,541 | 11,560 | | | 536 | 575 | 39 | | 6.7 |
| Cin. & Springfield | 81 | 81 | | | | 70,574 | 62,757 | 7,817 | | | 871 | 775 | 96 | | 12.4 |
| Cleve., Col. Cin. & Ind. | 391 | 391 | | | | 271,176 | 291,961 | 20,785 | | | 694 | 747 | 53 | | 7.0 |
| Cleve., Mt. Ver. & Del. | 144 | 157 | 13 | | 8.3 | 29,550 | 34,612 | 5,062 | | | 205 | 220 | 15 | | 6.8 |
| Denver & Rio Grande | 551 | 337 | 214 | | 63.5 | 317,681 | 128,291 | 189,390 | | | 577 | 381 | 196 | | 51.0 |
| Des Moines & Ft. Dodge | 84 | 84 | | | | 16,473 | 20,065 | 3,592 | | | 196 | 246 | 50 | | 20.2 |
| East Tenn., Va. & Ga. | 270 | 270 | | | | 110,752 | 104,696 | 6,056 | | | 410 | 388 | 22 | | 5.8 |
| Flint & Pere Marq. | 290 | 295 | 5 | | 1.4 | 119,883 | 118,024 | 1,859 | | | 401 | 400 | 1 | | 0.2 |
| Gal., Har. & San Antonio | 233 | 215 | 18 | | 8.4 | 100,217 | 93,641 | 6,576 | | | 430 | 433 | 3 | | 0.7 |
| Hannibal & St. Jo. | 292 | 292 | | | | 126,123 | 106,965 | 19,158 | | | 428 | 372 | 56 | | 15.1 |
| Houston & Tex. Cen. | 580 | 516 | 64 | | 12.4 | 325,635 | 272,701 | 52,934 | | | 561 | 529 | 32 | | 6.1 |
| Ill. Cent. Ill. lines. | 918 | 873 | 45 | | 5.2 | 421,235 | 487,260 | 66,025 | | | 459 | 538 | 79 | | 17.6 |
| Iowa lines. | 402 | 402 | | | | 71,616 | 126,537 | 54,921 | | | 178 | 315 | 137 | | 43.3 |
| Ind. Bloom. & West. | 212 | 212 | | | | 83,261 | 89,900 | 6,639 | | | 393 | 425 | 32 | | 7.4 |
| Ind. Dec. & Springf. | 153 | 153 | | | | 33,602 | 28,183 | 5,419 | | | 214 | 209 | 5 | | 2.4 |
| Int. & Gt. Northern | 594 | 526 | 68 | | 12.9 | 210,623 | 140,214 | 70,409 | | | 354 | 268 | 86 | | 32.6 |
| Lake Erie & West. | 362 | 308 | 54 | | 17.5 | 88,485 | 58,789 | 29,696 | | | 244 | 191 | 53 | | 27.9 |
| Louisville & Nashv. | 1,837 | 1,167 | 730 | | 66.3 | 803,490 | 575,035 | 228,455 | | | 437 | 519 | 82 | | 15.8 |
| Memphis & Charleston | 292 | 292 | | | | 111,050 | 102,252 | 8,798 | | | 380 | 350 | 30 | | 8.6 |
| Memphis, Pad. & No. | 115 | 115 | | | | 17,536 | 16,765 | 771 | | | 152 | 146 | 6 | | 4.6 |
| Mobile & Ohio | 506 | 506 | | | | 211,353 | 204,094 | 7,259 | | | 418 | 403 | 15 | | 3.6 |
| Nash., Chattanooga & St. L. | 467 | 454 | 13 | | 2.8 | 190,866 | 191,155 | 289 | | | 409 | 421 | 12 | | 2.8 |
| N. Y. & New England | 316 | 316 | | | | 176,427 | 1,900,908 | 26,519 | | | 558 | 474 | 84 | | 17.9 |
| Northern Central | 326 | 326 | | | | 382,657 | 350,860 | 31,797 | | | 1,174 | 1,015 | 159 | | 15.7 |
| Northern Pacific | 722 | 644 | 78 | | 12.1 | 79,776 | 77,250 | 2,526 | | | 111 | 129 | 18 | | 13.9 |
| Paducah & E'town | 185 | 185 | | | | 40,611 | 25,786 | 14,825 | | | 219 | 139 | 80 | | 57.0 |
| Pennsylvania | 1,902 | 1,872 | 30 | | 1.6 | 3,065,614 | 2,944,576 | 121,038 | | | 1,629 | 1,573 | 56 | | 3.5 |
| Phila. & Reading | 883 | 926 | 43 | | 4.6 | 1,136,428 | 1,085,162 | 51,266 | | | 1,287 | 1,172 | 115 | | 9.8 |
| Peoria, Dec. & Evansville | 192 | 192 | | | | 37,167 | 21,571 | 15,596 | | | 194 | 171 | 23 | | 13.5 |
| St. L. At. & T. H. | 195 | 195 | | | | 109,758 | 108,988 | 770 | | | 563 | 559 | 4 | | 0.7 |
| Main Line | 71 | 71 | | | | 60,660 | 51,749 | 8,911 | | | 854 | 771 | 83 | | 10.7 |
| Belleville Line | 71 | 71 | | | | 548,300 | 490,195 | 58,105 | | | 800 | 716 | 84 | | 11.9 |
| St. L. Iron Mt. & So. | 685 | 685 | | | | 178,234 | 199,644 | 21,410 | | | 284 | 381 | 97 | | 25.5 |
| St. L. & San Francisco | 617 | 524 | 103 | | 19.6 | | | | | | 184 | 210 | 26 | | 12.4 |
| St. P. Minn. & Manitoba | 866 | 656 | 210 | | 32.0 | 159,482 | 137,645 | 21,837 | | | 229 | 204 | 25 | | 12.8 |
| Scioto Valley | 100 | 100 | | | | 22,917 | 20,352 | 2,565 | | | 230 | 406 | 76 | | 18.9 |
| Wabash, St. L. & P. | 2,479 | 2,300 | 179 | | 7.8 | 18,922 | 953,143 | 14,003,011 | 1,409,275 | 678,551 | 479 | 533 | 54 | | 10.1 |
| Total, 46 roads | 30,772 | 26,272 | 4,500 | | 17.1 | 14,733,735 | 14,003,011 | 730,724 | | | 5,2 | | | | |
| Total increase | | | 4,500 | | | | | | | | | | | | |

RAILROAD EARNINGS, TWO MONTHS ENDING FEBRUARY 28.

| NAME OF ROAD. | MILEAGE. | | | | | EARNINGS. | | | | | EARNINGS PER MILE. | | | | |
|---|----------|--------|-------|------|-------|------------|------------|-----------|------------|-------|--------------------|-------|------|------|-------|
| | 1881. | 1880. | Inc. | Dec. | P. c. | 1881. | 1880. | Increase. | De-crease. | P. c. | 1881. | 1880. | Inc. | Dec. | P. c. |
| | | | | | | \$ | \$ | \$ | \$ | | \$ | \$ | \$ | \$ | |
| Ala. Gt. Southern | 290 | 290 | | | | 129,282 | 106,028 | 13,654 | | 12.8 | 415 | 368 | 47 | | 12.8 |
| Bur. Ced. Rap. & No. | 564 | 492 | 72 | | 14.6 | 292,390 | 349,488 | | 57,228 | 16.4 | 518 | 710 | | 192 | 27.5 |
| Cairo & St. Louis | 146 | 146 | | | | 65,288 | 48,124 | 17,164 | | 35.4 | 447 | 330 | 117 | | 35.4 |
| Central Pacific | 2,632 | 2,350 | 302 | | 12.9 | 3,002,908 | 2,271,101 | 731,807 | | 32.2 | 1,132 | 966 | 166 | | 16.9 |
| Chicago & Alton | 840 | 840 | | | | 940,531 | 1,021,068 | | 71,537 | 7.0 | 1,130 | 1,216 | | 86 | 7.0 |
| Chi. & Eastern Illinois | 224 | 159 | 65 | | 40.6 | 241,851 | 155,731 | 86,120 | | 55.2 | 1,080 | 980 | 100 | | 10.2 |
| Chi. & Gt. Trunk | 335 | 335 | | | | 216,056 | 170,742 | 45,314 | | 26.6 | 645 | 510 | 135 | | 26.6 |
| Chi. Mil. & St. Paul | 3,650 | 2,182 | 1,468 | | 67.3 | 1,074,000 | 1,533,047 | 170,953 | | 11.4 | 459 | 688 | | 229 | 30.1 |
| Chi. & Northwestern | 2,770 | 2,289 | 481 | | 20.9 | 2,197,967 | 2,280,316 | | 88,349 | 3.8 | 794 | 999 | | 205 | 3.8 |
| Chi. St. Paul, Minn. & O., Eastern Div. | 310 | 290 | 50 | | 19.2 | 230,520 | 197,449 | 33,071 | | 16.8 | 744 | 759 | | 15 | 2.0 |
| St. P. & S. C. Div. | 620 | 445 | 175 | | 39.3 | 166,404 | 169,456 | | 3,052 | 1.8 | 268 | 381 | | 113 | 29.7 |
| Cin. Ind. St. L. & Chi. | 390 | 300 | 90 | | | 332,447 | 328,238 | 4,209 | | 1.3 | 1,108 | 1,094 | 14 | | 1.3 |
| Cin. & Springfield | 81 | 81 | | | | 145,107 | 132,636 | 12,451 | | 9.5 | 1,791 | 1,640 | 151 | | 9.5 |
| Cleve. & Col. Cin. & Ind. | 391 | 391 | | | | 571,079 | 604,594 | | 33,485 | 5.4 | 1,461 | 1,540 | | 85 | 5.4 |
| Cleve., Mt. V. & Del. | 144 | 157 | 13 | | 8.3 | 62,069 | 68,803 | | 6,734 | 9.8 | 431 | 438 | | 7 | 1.6 |
| Denver & R. G. | 551 | 337 | 214 | | 63.5 | 625,157 | 253,184 | 371,973 | | 147.0 | 1,134 | 751 | 383 | | 51.1 |
| Des Moines & Ft. D'oce | 84 | 84 | | | | 41,440 | 39,444 | 1,996 | | 5.1 | 493 | 469 | 24 | | 5.1 |
| East Tenn., Va. & Ga. | 270 | 270 | | | | 219,389 | 215,761 | 3,628 | | 1.5 | 812 | 199 | 1 | | 1.5 |
| Flint & Pere Marq. | 290 | 295 | 5 | | 1.4 | 255,264 | 228,016 | 27,248 | | 11.9 | 854 | 773 | 81 | | 10.9 |
| Gal., Har. & San Antonio | 233 | 215 | 18 | | 8.4 | 126,985 | 796,781 | 20,204 | | 10.2 | 931 | 915 | 16 | | 1.7 |
| Grand Trunk | 1,404 | 1,273 | 131 | | 10.3 | 1,535,896 | 1,490,981 | 44,915 | | 3.0 | 1,094 | 1,171 | | 77 | 6.8 |
| Great Western | 526 | 526 | | | | 727,621 | 685,231 | 42,390 | | 6.1 | 1,382 | 1,303 | 79 | | 6.1 |
| Hannibal & St. Jo. | 292 | 292 | | | | 279,180 | 343,041 | | 63,861 | 18.9 | 955 | 1,174 | | 218 | 19.4 |
| Houston & Texas Cen. | 580 | 516 | 64 | | 12.4 | 685,341 | 591,851 | 93,490 | | 15.7 | 1,185 | 1,147 | 35 | | 12.9 |
| Ill. Cent. Ill. lines | 918 | 873 | 45 | | 5.2 | 899,034 | 954,718 | | 55,684 | 5.8 | 979 | 1,094 | | 115 | 1.1 |
| Iowa lines | 402 | 402 | | | | 104,396 | 523,721 | | 59,432 | 23.4 | 483 | 631 | | 148 | 23.4 |
| Ind., Bloom. & West. | 212 | 212 | | | | 173,544 | 170,458 | 3,086 | | 1.8 | 819 | 804 | 15 | | 1.8 |
| Ind., Dec. & Springfield | 153 | 118 | 35 | | 28.8 | 73,881 | 34,631 | 39,250 | | 110.4 | 483 | 247 | 236 | | 95.5 |
| Inter. & Gt. Northern | 594 | 526 | 68 | | 12.9 | 392,086 | 299,757 | 92,329 | | 30.8 | 660 | 569 | 91 | | 16.0 |
| Lake Erie & Western | 362 | 308 | 54 | | 17.5 | 193,063 | 108,283 | 84,780 | | 79.0 | 535 | 352 | 183 | | 52.0 |
| Louisville & Nash. | 1,837 | 1,167 | 730 | | 66.3 | 1,611,500 | 1,249,490 | 362,010 | | 22.0 | 877 | 1,128 | | 251 | 22.2 |
| Mem. & Charleston | 292 | 292 | | | | 231,892 | 231,517 | 375 | | 0.2 | 794 | 792 | 2 | | 0.2 |
| Mem., Pad. & No. | 115 | 115 | | | | 36,433 | 30,093 | 340 | | 0.9 | 317 | 314 | 3 | | 0.9 |
| Mobile & Ohio | 506 | 506 | | | | 459,596 | 454,210 | | 24,614 | 5.4 | 849 | 898 | | 49 | 5.4 |
| Nash., Chattanooga, & St. L. | 467 | 454 | 13 | | 2.8 | 369,009 | 396,789 | | 27,780 | 7.0 | 790 | 874 | | 84 | 9.6 |
| N. Y. & New England | 316 | 316 | | | | 366,176 | 314,139 | 52,037 | | 16.4 | 1,151 | 994 | 157 | | 16.4 |
| Northern Central | 326 | 326 | | | | 768,812 | 665,355 | 103,457 | | 15.6 | 2,358 | 2,041 | 317 | | 15.6 |
| Northern Pacific | 722 | 644 | 78 | | 12.1 | 193,826 | 158,649 | 35,177 | | 22.1 | 268 | 246 | 22 | | 8.9 |
| Pad. & E'town | 185 | 185 | | | | 83,239 | 61,063 | 22,176 | | 32.1 | 450 | 341 | 109 | | 32.1 |
| Pennsylvania | 1,902 | 1,872 | 30 | | 1.6 | 6,284,830 | 6,028,124 | 256,706 | | 4.3 | 3,307 | 3,220 | 87 | | 2.2 |
| Pere, Dec. & Evans | 192 | 192 | | | | 80,774 | 89,238 | 38,346 | | 93.3 | 405 | 313 | 99 | | 29.4 |
| St. L. & A. T. & H. M. Life | 195 | 195 | | | | 211,532 | 205,010 | 6,522 | | 2.7 | 1,085 | 1,056 | 29 | | 2.7 |
| Bellefonte Line | 71 | 71 | | | | 128,344 | 110,906 | 17,438 | | 15.7 | 1,808 | 1,563 | 243 | | 15.7 |
| St. L., Iron Mt. & So. | 685 | 685 | | | | 1,119,257 | 1,046,178 | 73,079 | | 7.0 | 1,634 | 1,527 | 107 | | 7.0 |
| St. Louis & San Fran. | 627 | 515 | 112 | | 21.7 | 390,669 | 305,339 | | 4,970 | 1.2 | 623 | 767 | | 144 | 18.8 |
| St. P., Minn. & Man. | 866 | 656 | 210 | | 32.0 | 413,669 | 3,7884 | 95,785 | | 30.1 | 478 | 484 | | 6 | 1.5 |
| Scioto Valley | 100 | 100 | | | | 44,627 | 42,279 | 2,348 | | 5.6 | 446 | 423 | 23 | | 5.6 |
| Texas & Pacific | 604 | 444 | 160 | | 36.0 | 514,428 | 437,428 | 57,000 | | 12.4 | 852 | 1,030 | | 178 | 17.8 |
| Wab., St. L. & Pacific | 2,470 | 2,300 | 170 | | 7.8 | 1,630,539 | 1,891,759 | | 261,217 | 12.4 | 658 | 809 | | 151 | 18.6 |
| Total, 40 roads | 32,684 | 27,873 | 4,824 | 13 | | 31,686,032 | 29,351,855 | 3,059,823 | 727,646 | | 969 | 1,053 | | 84 | 8.6 |
| Total increase | | | 4,811 | | 17.2 | | | 2,332,177 | | 7.9 | | | | | |

States Minister to Austria, is a director of the Delaware, Lackawanna & Western and several of its controlled companies, and also of the International & Great Northern.

—We are informed that the report, widely spread in the West, that Mr. George W. Stevens, now Master Mechanic of the Michigan Southern Division of the Lake Shore road, has been offered the position of General Master Mechanic of the New York Central & Hudson River road, is without any foundation in fact.

—Hon. Hugh J. Jewett, President of the New York, Lake Erie & Western Company, was last week chosen President of the World's Fair Commission in New York, to succeed Gen. Grant, but declined the position on the ground that he could not attend to its duties without neglecting the other important interests in his charge.

—Col. D. H. Goodwin, who was 35 years ago Chief Engineer of the Little Schuylkill road, and who planned the Mahanoy tunnel and other transportation lines in the Schuylkill coal region, is reported to be dying in the poorhouse at Silver Cliff, Col. He went to Colorado over 20 years ago and was for a time successful in mining, but has lately been very unfortunate.

—Col. E. A. L. Roberts, a well-known inventor and engineer, died suddenly in Titusville, Pa., last week. His most profitable invention was the torpedo for opening up and cleaning out oil wells, which had brought him a large fortune. He had lately turned his attention to locomotives, and had ordered one built at the Baldwin Works with which he expected to run 80 miles an hour.

—The report that Mr. M. N. Forney is going to Europe to buy locomotives for a prominent railroad has been so widely circulated that a denial of the latter part of it seems to be required. He intends, it is true, to go to Europe in May or June, chiefly for rest and recreation, and may devote some time to the study of European methods of operating and constructing railroads and their equipment, but he does not expect to transact any other business while there.

—As an example of the engrossment of busy men in their own business, it is mentioned that Mr. J. H. Rutter, Third Vice-President of the New York Central & Hudson River Company, and probably for some years the most active of all the officers of that corporation in negotiations with other railroad men, when he visited the New York, New Haven & Hartford offices last Saturday in his capacity as a member of the World's Fair Commission to solicit a subscription from that company, had to be introduced to President Watrous, never having met him before, though the offices of the two men are in the same building, and the trains of the two roads use the same depot and the same track for several miles.

—The Chicago, Burlington & Quincy has been long known as a training school for railroad men, and the Galesburg (Ill.) *Plaindealer*, thus sets forth some of its claims to distinction: "There is not a western railroad but what is supplied with conductors who studied and learned railroading under Superintendent H. Hitchcock, one of the most distinguished of the faculty of the great American Railroad University. There are scores of men occupying important positions everywhere—such as master mechanics, conductors and agents—who graduated from the ranks on the C. B. & Q. Following are a few of those who have ascended the ladder of promotion:

"Superintendent H. Hitchcock, for twenty-five years Division Superintendent of the C. B. & Q., began as a switchman in Chicago, and carries the badge of a switchman to this day—finger off.

"J. D. Besler began as a section hand on the C. B. & Q., on a section near Plymouth, and is now Superintendent of all the lines of that road in Illinois.

"A. N. Towne began as fireman on the C. B. & Q., under H. Hitchcock, and is now General Superintendent of the Central Pacific and Southern Pacific.

"C. H. Hudson began railroading on the C. B. & Q., and was, until a few days ago, General Manager of the Trans-Ohio Division of the Baltimore & Ohio.

"T. J. Potter, now General Manager of all the C. B. & Q. lines, was a few years ago a switchman in Iowa.

"J. T. Clark, now General Superintendent of the Union Pacific, began railroading as a section hand at Buda.

"A. L. Howland, now Assistant Superintendent of Galesburg Division of the C. B. & Q., came from Vermont, and began as a brakeman on this road.

"C. H. Chappell, General Superintendent of the Chicago & Alton, began as a clerk in the office of Superintendent Hitchcock, in this city.

"Robert Colville, Master Mechanic at the Galesburg shops, began work at 50 cents per day.

"W. D. Sanborn, now General Agent of the C. B. & Q., at St. Louis, began as a train-boy.

"H. F. Hawley, who is Division Superintendent at Bloomington, began his railroad life here as brakeman, rose to Train-Master, a position which he held until called to more important duties on other roads.

"Andrew Stevens, the General Master Mechanic of the Central Pacific, was an engineer on this road."

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Two months ending Feb. 28:

| | 1881. | 1880. | Inc. or Dec. | P. c. |
|-----------------------|-------------|-------------|--------------|---------------|
| Burr. Cedar Rap. | | | | |
| & No. | \$292,250 | \$349,487 | D. | \$57,238 16.3 |
| Net earnings.... | 54,182 | 140,776 | D. | 86,594 61.4 |
| Northern Central. | 768,813 | 665,355 | I. | 103,458 15.6 |
| Net earnings.... | 275,013 | 238,199 | I. | 36,814 15.3 |
| Month of January: | | | | |
| St. John & Maine. | \$8,658 | \$7,813 | I. | \$845 1.1 |
| Net earnings.... | 248 | 571 | D. | 323 56.7 |
| Month of February: | | | | |
| Pennsylvania..... | \$3,095,614 | \$2,944,576 | I. | \$151,038 5.2 |
| Net earnings.... | 1,158,104 | 1,232,182 | D. | 74,078 6.3 |
| Third week in March: | | | | |
| Chic. & Eastern Ill. | \$30,515 | \$23,653 | I. | \$6,862 28.5 |
| Chic. Mil. & St. P. | 213,000 | 204,182 | I. | 8,818 4.3 |
| St. L. I. M. & So. | 164,400 | 112,538 | I. | 51,862 46.1 |
| Denver & R. G.... | 85,294 | 35,537 | I. | 49,757 140.1 |
| St. P., Minn. & Man. | 74,200 | 59,300 | I. | 14,900 25.3 |
| Week ending March 18: | | | | |
| Great Western.... | \$116,163 | \$110,061 | I. | \$6,102 4.9 |
| Week ending March 19: | | | | |
| Chi. & Gd. Trunk.. | \$31,995 | \$31,590 | I. | \$405 1.2 |
| Grand Trunk.... | 216,743 | 201,257 | I. | 15,486 7.7 |

Rates on Lumber.

A circular just issued by Commissioner Fink states that the rates on lumber and tenth-class freight from Chicago to New York and Boston will be 30 and 35 cents (per 100 pounds) respectively from April 1 to Oct. 31. As now prepared the rates on lumber from Chicago to other Eastern points, to take effect April 1, are as follows: To Buffalo, Suspension Bridge and Pittsburgh, 17½ cents; to Albany, 27½ cents; to Baltimore and Washington, 22 cents; to Philadelphia, 30 cents.

Grain Movement.

For the week ending March 19 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

| Year. | Northwestern receipts. | Northwestern shipments. | Atlantic receipts. |
|-----------|------------------------|-------------------------|--------------------|
| 1874..... | 1,849,558 | 1,013,655 | 1,364,708 |
| 1875..... | 1,398,005 | 1,087,241 | 1,727,392 |
| 1876..... | 1,574,910 | 1,005,057 | 1,860,581 |
| 1877..... | 1,290,556 | 670,822 | 1,450,605 |
| 1878..... | 2,728,322 | 1,830,874 | 4,041,054 |
| 1879..... | 2,811,876 | 2,371,995 | 4,024,474 |
| 1880..... | 4,302,860 | 3,694,580 | 4,737,406 |
| 1881..... | 3,640,937 | 2,540,409 | 4,122,442 |

The receipts of the Northwestern markets, with the exception of last year, are larger than in the corresponding week of any previous year. They are also 45 per cent. larger than the previous week and are the largest since December, notwithstanding light receipts at Chicago and Milwaukee. The shipments of these markets, though nearly a third smaller than in the corresponding week last year, were nearly 55 per cent. larger than the week before and were much larger than in any other week since navigation closed last November. The receipts of Atlantic ports, though smaller than in the corresponding weeks of 1879 and 1880, were 22½ per cent. larger than the week before and were the largest since November. That is, there is a great and sudden increase of the grain movement, in spite of the snow blockades north and west of Chicago. This does not yet make it as large as in March of last year, but in that month the rail grain movement was the largest ever known.

Of the Northwestern receipts Chicago had 33.7 per cent.; St. Louis, 22.6; Toledo, 17; Peoria, 10.9; Milwaukee, 8; Detroit, 4.7, and Cleveland, 3.1 per cent. Chicago again takes its accustomed place at the head of the list, and with more than double the receipts of the previous week, and the largest it has had for six weeks; while Milwaukee had eight times the receipts of the previous week, and the largest it has had for seven weeks. Toledo shows an increase of nearly one-third over the previous week and has much larger receipts than in any other week of this year. St. Louis receipts, though much above its average, were a quarter larger two weeks ago.

Of the Atlantic receipts, New York had 34 per cent.; Baltimore, 23.2; Philadelphia, 16; New Orleans, 11.4; Boston, 9.2; Portland, 0.8, and Montreal, 0.3 per cent. Compared with the previous week there were gains everywhere except at Montreal and Boston, but chiefly at Philadelphia, Baltimore and New Orleans. The latter's receipts were exceeded two weeks before and in the first week of January, but in no other weeks this year, but are a little smaller than in the corresponding week of last year.

Exports from Atlantic ports for five successive weeks have been:

| | March 23. | March 16. | March 9. | March 2. | Feb. 23. |
|--------------|-----------|-----------|-----------|-----------|-----------|
| Flour, bbls. | 108,896 | 148,441 | 113,111 | 114,949 | 111,022 |
| Grain, bush. | 3,786,665 | 3,975,208 | 3,667,058 | 2,808,277 | 1,758,010 |

Exports of breadstuffs from all the United States for the months of January and February are reported as follows by the Bureau of Statistics:

| | 1881. | 1880. | Inc. or Dec. | P. c. |
|-----------------------|------------|------------|--------------|-----------------|
| Grain, bush..... | 23,456,167 | 24,863,598 | D. | 1,407,431 - 5.7 |
| Flour and meal, bbls. | 1,362,938 | 845,369 | I. | 517,569 61.2 |

Out of 7,650,182 bushels of wheat exported this year in February, 2,277,572, or nearly 30 per cent. went from San Francisco, the New York exports being but little greater (32½ per cent.), and Baltimore following with 21½ per cent. New Orleans exported in that month but 339,042 bushels of wheat (4.4 per cent. of the whole), but 503,004 bushels of corn, which was 12.2 per cent. Of the whole New York and Baltimore meanwhile exported twice as much corn and Boston and Philadelphia one-fifth more. The total value of the breadstuffs exported from all ports was a little less this year for February, and also for the two months and the eight months ending with February.

For the week ending March 25 (six days later than the week given in the first table), the receipts of the four ports, New York, Boston, Philadelphia and Baltimore, were 4,554,551 bushels, or 10 per cent. more than in the previous week at all seven of the ports. These receipts were swelled by the arrival of something like 400,000 bushels at New York in canal boats that had wintered at Albany.

Coal Movement.

Coal tonnages for the week ending March 19 are reported as follows:

| | 1881. | 1880. | Increase. | P. c. |
|------------------------|---------|---------|-----------|-------|
| Anthracite..... | 511,850 | 340,234 | 171,616 | 50.4 |
| Semi-bituminous..... | 107,246 | 21,678 | 85,568 | 394.5 |
| Bituminous, Penna..... | 54,750 | 54,686 | 64 | 0.1 |
| Coke, Penna..... | 51,562 | 42,258 | 9,304 | 22.0 |

The April price-list of the anthracite companies shows a reduction of about 25 cents per ton on all sizes of coal.

Cumberland and Clearfield production and shipments are now heavy. Both contrast strongly with this time last year, when mining was almost stopped by strikes.

The Chesapeake & Ohio Canal is now open for business. The first through boats left Cumberland for Georgetown on March 25, but shipments all through the week were light. This week they will probably increase largely.

Arizona and New Mexico Freight Rates.

The following circular has been issued by Commissioner Fink:

"In accordance with notice received from the Union, Central and Southern Pacific railroads, and in conformity with a resolution passed by the trunk lines, notice is hereby given that from and after date shipments from New York, Philadelphia, Baltimore, Boston and New England, destined to points in Arizona and New Mexico, will no longer be considered California business, but will be classified and reported according to the trunk-line west-bound classification, and will be charged for at regular tariff rates to Chicago, Mississippi and Missouri River points, where consigned in care of the Union Pacific or Atchison, Topeka & Santa Fe railroads. All previous arrangements conflicting herewith are revoked."

Canadian Canal Traffic.

During the last season 26,265 vessels, steam and sail, with 4,143,647 tons capacity passed through the Canadian canals—nearly all through Welland and the several short canals in the St. Lawrence River. The tons of freight carried through the Welland Canal were 896,122; through the St. Lawrence canals, 990,137. The chief shipments through the Welland Canal were:

| | |
|------------------------|---------|
| Barley..... | 4,497 |
| Corn..... | 155,522 |
| Wheat..... | 251,242 |
| Coal..... | 153,517 |
| Lumber and timber..... | 72,301 |
| Iron ore..... | 26,634 |

The 411,261 tons of grain passing through the canal amounted to about 15,000,000 bushels.

RAILROAD LAW.

Proposed Massachusetts Law Regulating Fares.

The following is the bill now pending before the Massachusetts Legislature, which has called out a great deal of discussion:

Section 1. No railroad corporation whose road exceeds five miles in length shall charge or receive exceeding 3 cents per passenger per mile.

Sec. 2. No railroad corporation whose road exceeds 10 miles in length and that has paid an annual dividend of 4 per cent. or more, and less than 6 per cent., for the past two years upon its capital stock, shall charge or receive more than 2½ cents per passenger per mile.

Sec. 3. No railroad corporation whose road exceeds 10 miles in length, and that has paid an annual dividend of 6 per cent. or more for the past two years upon its capital stock, shall charge or receive more than 3 cents per passenger per mile.

Sec. 4. Any railroad corporation that shall ask and receive a greater fare than that allowed by law shall forfeit \$50 for each offence, which sum may be recovered, together with the excess so received, by the party paying it; but it shall be lawful, and not construed as extortion, for any railroad company to take the legal rate of fare for one mile for any fractional distance less than a mile.

Sec. 5. This act shall apply to all railroads leased or operated by any other corporation within the limits of the commonwealth.

Sec. 6. This act shall take effect July 1, 1881.

The Georgia Commission Law.

The following is part of the decision of the United States Circuit Court in the case of Tilley against the Railroad Commissioners of Georgia and the Savannah, Florida & Western Company:

The ingenuity of counsel has brought into the case these various paragraphs of the constitution in the hope that the Railroad Commissioners' act might be impaled on some one of them.

I have considered them all. Most of them have but a very remote application to the law—some of them have already been considered by the Supreme Court of the United States in *Munn vs. Illinois* and *Pike vs. Chicago*, 94, U. S. supra, and decided to have no control over similar legislation.

The act of the Legislature if constitutional may be considered unwise or even oppressive, but even if it is the remedy is not with the Court but with the Legislature. If the General Assembly in its passage were acting within the scope of its constitutional power, no matter how crude and unjust the law may be, the Court cannot apply the remedy.

There is nothing in the act complained of which indicates a disposition on the part of the Legislature to oppress the railroad companies. It appears to be rather an attempt in good faith to discharge a duty imperatively demanded of the Legislature by the state constitution.

The complaint is not so much against the Legislature as against the Railroad Commissioners. Their administration of the law is charged to be oppressive and unjust to the railroad company in which the complainant is a stockholder. It is alleged that the schedule of rates fixed by the Commissioners for said railroad is, if adhered to, destructive to the railroad property and ruinous to its creditors and stockholders.

The evidence submitted upon this point by the complainant, consisting of the affidavits of Mr. Haines, the General Manager of the defendant railroad company, and others, on the one side, and the affidavits and reports and circulars of the Railroad Commissioners on the other, is very conflicting and irreconcilable. It is not so much a conflict as to the facts as it is in the matters of judgment and inferences from facts.

One thing is made clear to my mind by the evidence. It is that there has been an honest and painstaking effort on the part of the Commissioners to perform their duty under the law fairly and justly. The difference between the Railroad Commissioners and the officers of the Savannah, Florida & Western Railroad Company is an honest difference of judgment.

The officers of the railroad company declare that the rates fixed by the commission will so reduce its income that it will not suffice to pay the running expenses of the road and the interest on its bonded debt, leaving nothing for dividends to its stockholders. The affidavit of the Railroad Commissioners states that the average rates charged by the Savannah, Florida & Western Railroad Company exceeded the average of rates charged by the Air line road, the Macon & Brunswick and the Brunswick & Albany—the three weakest roads in the state—by 60 per cent., and the rates charged by all other railroads in this state over 75 miles long by more than 70 per cent. The Railroad Commissioners assert that their schedule was framed to produce 8 per cent. income on the value of the road after paying cost of maintenance and running expenses. Which view is the correct one it is impossible to decide from the evidence submitted. There is, however, a conclusive way, and it seems to me it is the only one by which this controversy can be settled, and that is by experiment. A reduction of railroad charges is not always followed by a reduction of either gross or net income. It can soon be settled which is right—the railroad company's officers or the Railroad Commission, in their view of the effect of the Commission's tariff of rates, by allowing the tariff to go into operation.

If it turns out that the views of the railroad company are correct, and that the schedule fixed by the Commission is too low to afford a fair return upon the value of the road, the remedy is plain, for the law makes it the duty of the Commissioners "from time to time, and as often as circumstances may require, to change and revise said schedules."

This duty the Commissioners stand ready to perform as they testify by their affidavit on file in this case. In short they constitute a permanent tribunal where the complaints of the railroad companies of any action of the Commissioners can be made and heard, and any wrong suffered thereby corrected.

The railroad company, after testing the results of the schedule of rates fixed by the Commissioners, and finding it to be unjust and unreasonable, can apply to the Commissioners for redress. If redress is denied them there they can apply to the Legislature for relief. Believing the law under which Commissioners are appointed to be within the constitutional power of the Legislature, the redress must come either from the Commissioners or the General Assembly; it is not in the power of this Court to give relief.

It has been the policy of Georgia at least since Jan. 1, 1863, to grant no charter which should not be subject to revision or repeal by the General Assembly. Whether wise or unwise this policy has been embodied in the constitution of 1877. It was clearly the purpose of the people in the adoption of that revision of the organic law to keep the charges of the railroad companies of the state within legislative control. They were not satisfied with the rules of the common law on this subject. The act of Oct. 14, 1879, is but the practical expression of the will of the people of the state as embodied in their organic law. It is the exercise of a right which they have been careful to reserve, and subject to which the defendant company were allowed to exist as a corporation.

My conclusion is that the act of the Legislature of Georgia, approved Oct. 14, 1879, entitled an act to provide for the regulation of railroad freight and passenger tariffs in this state, etc., etc., is not in violation of either the constitution of the United States or of the state of Georgia; that under the constitution of Georgia power and authority is conferred on the Legislature to pass laws to regulate freight and passenger tariffs on railroads, and require reasonable and just rates, and it is its duty to pass such laws; that it may prescribe such rates, either directly or through the intervention of a commission, and that the question whether the rates prescribed by the Legislature, either directly or indirectly, are just and reasonable, is a question which, under the constitution, the Legislature may determine for itself.

It results from these conclusions that the motion for injunction *pendente lite* must be denied and the restraining order heretofore allowed must be dissolved, and it will be so ordered.

THE SCRAP HEAP.

Consolidation Locomotives.

At a meeting of division officers of the New York, Pennsylvania & Ohio road in Cleveland last week, the session was largely devoted to discussing the consolidation locomotives, of which 30 are now on the road. The opinion was unanimous in their favor as being economical and doing better service than any other class of engines on the road. Several of these engines have lately been loaned to the Lake Shore road, to enable the officers of that road to make some tests.

Killed at their Posts.

A dispatch from Pittsburgh, March 24, says: "Two workmen on the Baltimore & Ohio road to-day gave a wonderful evidence of their fidelity, for they deliberately chose death to themselves rather than to a hundred others who were in the care of the company. About half-past 2 o'clock this afternoon John Sullivan and his brother Michael were at work on the track near Demmler Station. John Sullivan was section boss of the subdivision between McKeesport and Port Perry, and he had made a tour along the track to see if everything was in proper condition. He found a rail that was not quite straight, and so he and his brother took a heavy trackman's crowbar and lifted the rail to straighten it. While they were busily at work the afternoon accommodation train east, with a heavy load of passengers, came along. There was a curve just below the place where the men were working, and they did not see the train until it was almost upon them. They took in the situation at a glance. The rail which they had been fixing was lifted up, and the huge crowbar was wedged tightly in such a position that the train would certainly have been thrown from the track, unless the bar was removed. On one side of the track was a hill, and on the other a steep bank running down to the river, so if the train was thrown from the track while under a full headway of steam there would undoubtedly be an appalling loss of life. The men seized the bar and began frantically to pull and twist it about. The engineer of the train saw them, but could not stop. He says that their efforts to free the crowbar and lower the rail were frantic and like the workings of mad men, and they seemed to forget their own danger.

"The bar was loosened and the rail lowered just as the train reached it, but the men who had done so nobly paid for their daring dearly. The engine struck them and killed John instantly, and mangled Michael so frightfully that he died in a short time. The men were married, and leave families."

The men deserve praise, of course, for their courage and self-sacrifice; but could it not have been avoided if they had simply put out a proper signal to stop the train? A section-boss should surely have had one with him.

Russian Transportation.

At a meeting of the Philadelphia Engineering Club, March 19, Mr. H. A. Verh presented a most interesting description of his recent investigations of the coal and iron mines and the railroads and harbors of Southern Russia, illustrated by maps of the territory and specimens, and enlivened by many amusing and instructive anecdotes of engineering schemes and methods in that country. The coal basin where his examinations were made is about 160 miles east and west by 60 miles north and south, the coal varying in quality from very hard anthracite in the east, to very inferior gas coal in the west. The iron of the coal basin is a brown hematite, formed by the decomposition of the carbonate of iron, and poor in quality, but red hematite occurs further east, and accessible from the coal mines. The relations of the government to the railroads, and of the latter to the producers and shippers; the rude, and, notwithstanding the great cheapness of labor, the very expensive methods of transporting and shipping the coal; the extraordinary transportation of timber to that almost treeless region, and the difficulty of loading or discharging vessels in the shallow harbors, together with many other matters of information and interest connected with the iron and coal industries, were very interestingly treated.

A Very Good Lie.

The Cincinnati *Enquirer* has a correspondent who tells a story from which the following very readable romance is taken:

"Tom related many dangerous adventures of his railroad life during the past 24 years, but while learning to be an engineer under Ab, and after becoming a master mechanic, he was firing for Ab on the old No. 4 engine, and Ab seeing he was about to eclipse him as an engineer became jealous and sought opportunity to get shut of him lest he might become his greatest rival in a time when jobs were scarce on a great thoroughfare like the Ohio & Mississippi.

"Sure enough, in the month of October, 1850, going west with a heavy freight train of 30 cars, they stopped to wood and water at Green Spring, 14 miles west of Mitchell, when Ab told him to take the monkey-wrench, go under the front car and tighten the bolts to the brakes, and he had not been there three minutes when Ab pulled the throttle wide open and started the train at the rate of 30 miles per hour, leaving Tom in the most thrilling and perilous position imaginable.

"On the impulse of the moment Tom says he threw himself on a balance across the axle of the trucks, and traveled in that position to Shoals, a distance of eight or ten miles, without sustaining any injury except to his trousers, which were rent asunder, and the perplexity of mind incident to his perilous condition. But from that moment he determined to get even with Ab, which he told him should come to pass in the course of human events, whether school kept or not.

"A few days passed, when a ball was announced at Seymour, and all railroad men on the Middle Division were invited, and Ab delighted in dancing, and on that evening was in a great hurry to get through on time. When they got to Brownstown one of the flues was leaking, greatly retarding the steam. Ab being about half drunk and powerfully anxious to get to the ball, Tom said he hauled all the fire

out of the fire-box and told Ab to crawl in and repair the flue, which he did as soon as it cooled down.

"At that moment Tom looked up at the steam gauge and said he found 96 pounds of steam, when he closed the door on Ab and pulled the throttle, making 10 miles run to Seymour in 25 minutes and 40 seconds by the watch, and on opening the door of the fire-box Ab crawled out, looking like a singed owl, and the first word Ab said was if that would offset the ride he gave him on the axle he was willing to treat and call it even."

A Runaway.

The following remarkable story is from the Las Vegas (New Mexico) *Optic*: "The most hair-raising episode that ever happened to a New Mexican mountain railway train fell to the lot of Conductor Blessingham Thursday afternoon at 3 o'clock on the west slope of Glorieta summit. The train comprised nearly 30 loads, and as it entered upon the descent, Jake Brown, the engineer, threw on the brake, but found it was broke, and would not work. The train gained momentum to such a frightful extent that the switch cables and hooks lying on the base in front were hurled from their place into the air, breaking one of the locomotive's guard rails. Brown called for brakes, but the trainmen had already set every one, and realized that the train was beyond their control. Seeing that nothing could be done to stop the mad course the train was going, Brown jumped from the cab while going at the rate of sixty miles an hour, and landed 72 ft. distant, actual measurement. Blessingham, who was on the caboose with Pawnee Charlie and wife as passengers, fearing that the train was going to destruction, cut his way-car loose and checked it with the brakes, while the train continued its velocity down the long grade. The fireman stood at his post like a hero, and while the engine was plunging down the flight at a giddy speed, he crawled out on the foot-board and poked sand through the sand-box, thinking that it might assist the wheels in getting a grip upon the rails. As the train sped around Material Curve, which is "short and steep," the velocity was so great that the locomotive ran on one rail, and overbalanced so greatly that it came within an ace of losing its equilibrium. The brakemen on deck were obliged to lie flat and cling to the running-boards for safety. For six miles those badly-frightened men stuck to the ship and faced the horrors of death. Below Canoncito is a natural basin, with three miles of level track, and it was on this stretch that the runaway train was mastered and stopped. Some of the cars were laden with iron for the front, but they were unloaded before the train stopped by the material being hurled in all directions."

Railroad Taxation in Wisconsin.

The select committee to which was referred about a dozen bills relating to taxation of railroads, reported on Thursday evening. The recommendation was indefinite postponement. The chairman, Mr. McFetridge, said it was not claimed before the committee that the railway companies of the state now were not paying their fair proportion of taxes; on the contrary, it was very satisfactorily demonstrated that the railway property was paying a tax at least as high as that paid by other property. An argument was submitted to the committee in behalf of bill No. 463 A, which, conceding that the railway companies might be paying too much tax, and that under the operations of the bill, if it became a law, their taxes might be reduced, urged the passage of the bill upon the theory that the present system of railway taxation is vicious. That system has been in force in this state a great many years, and the committee, after considering the subject, is of the opinion that it is preferable to any other which has been suggested.

The committee is inclined to the opinion that under our Constitution there is no middle ground between the present system of tax upon gross earnings, without regard to value, and a system which shall assess and tax railway property the same as other property is assessed and taxed. The latter system is fruitful of complications and difficulties suggested by Chief-Justice Cole in his opinion in the plank-road case in the 11th Wisconsin, referred to in the argument before the committee. It is obvious that the collection of taxes could be delayed, and rendered uncertain and expensive litigation. Under the present system the railway tax is collected promptly without expense. The history of taxation in this state shows that a void act upon the subject is liable to affect the entire state taxation, and to produce great confusion and embarrassment.

No dissatisfaction upon the part of the people with the present system has been manifested, and in view of the complications which might arise, and the difficulties and dissatisfaction which would, in the judgment of the committee, inevitably follow a change in the system, it is of the opinion that it is the part of wisdom to leave the present law undisturbed.—*Madison (Wis.) Democrat*, March 26.

OLD AND NEW ROADS.

Allegheny Valley.—It is announced that this road, which has been controlled by the Pennsylvania for some years, will shortly be placed under the direct management of that company. It will be known as the Allegheny Valley Division of the Pennsylvania Railroad. The change is principally for economy in management and convenience in accounts. The road extends from Pittsburgh to Oil City, 132 miles, with the Plum Creek Branch, 7 miles, the Eligo Branch, 10 miles, and the Low Grade Division, from Red Bank to Driftwood 110 miles. This last line was built chiefly for the Pennsylvania, but never used by it.

Atlanta & Charlotte Air Line.—The stockholders of this company, after considering proposals from the Baltimore & Ohio and the Richmond & Danville companies, have voted to lease the road to the Richmond & Danville, possession to be given April 2. The terms of the lease as reported are very favorable, probably owing to the competition between the two companies. The lessee is to pay interest at 7 per cent. on \$4,750,000 bonds, at 6 per cent. on \$450,000 bonds, and 5 per cent. dividends on the \$1,700,000 stock; should the gross earnings reach \$1,500,000 per year, 6 per cent. is to be paid on the stock, and 7 per cent. if they should reach \$2,000,000 in any one year. Last year the net earnings about equalled the interest on the bonds.

The road (originally the Atlanta & Richmond Air Line), came to the present holders through foreclosure of their mortgage. It is 269 miles long, from Atlanta, Ga., to Charlotte, N. C. It is a very good and direct line from Atlanta and passes through a fine but only partially developed country. Its outlet from Charlotte north is now controlled by the combined Atlantic Coast and Piedmont Air Line and it can be worked by that combination better than by anyone else. The lease would have been of little advantage to the Baltimore & Ohio until the Virginia Midland extension is finished to Charlotte, but would have been of great value to that extension, which will now be pretty well shut off from connections south of Charlotte.

Baltimore & Ohio.—The New York passenger business

of this company will be withdrawn from the Bound Brook line and returned to the Pennsylvania from April 3 next, an agreement having been concluded as to passenger as well as freight business. Tickets to points on the Baltimore & Ohio will be at once placed on sale again in the Pennsylvania offices.

It is still asserted that the new line between Baltimore and Philadelphia will certainly be built as soon as the necessary arrangements can be completed.

It is stated that the company will soon begin work on a branch from Connellsville, Pa., to Bellevue, on the Monongahela, and thence up Pike Run to Washington, where it will connect with the Wheeling, Pittsburgh & Baltimore Division. This line is intended to reach the coke region, and a large part of it will be parallel to branches of the Pennsylvania road.

Baltimore & Potomac.—This road from March 2 to 4.30 p. m. on March 4 brought to Washington 1,384 cars from the north and 180 cars from the south, holding about 79,000 passengers. There were 385 sleeping cars at Washington, probably the largest number ever brought together at one time.

Boonville, St. Louis & Southern.—The stock of this company has been increased from \$250,000 to \$1,000,000. The road is to be extended from Versailles, Mo., southward this season.

Buffalo, Pittsburgh & Western.—At a called meeting in Philadelphia March 28 the stockholders voted to authorize a mortgage upon the property of the company to secure an issue of \$7,500,000 consolidated bonds. Of these \$4,000,000 will be retained to exchange for bonds of previous issues now outstanding, and the balance will be used to build the extensions to Salamanca, Bradford and Buffalo, and for improvement of the old road.

Central City, Deadwood & Eastern.—This company, it is said, will very soon begin work on a line from Deadwood, Dak., to the coal fields in Wyoming just across the Dakota line. The intention is also to build branches reaching all the leading mines in the Black Hills.

Central Tunnel.—This company has filed articles of incorporation in New York, with a capital of \$5,000,000. The road is to run from City Hall to the Grand Central Depot, New York. Among the incorporators are H. C. Stetson and George Lorillard.

Chesapeake & Ohio.—President Huntington has recently been on a trip through the West, and it is reported that he has made important arrangements for connections for this road. It is said that he has secured control of the Paducah & Elizabethtown and the Memphis, Paducah & Northern, and that he will at once proceed to fill up the unfinished gap in the last-named road. Also, that he will build a new line from Lexington to Louisville, by way of Versailles, a charter for such a line having been granted by the Kentucky Legislature at its last session. A Cincinnati connection over the Kentucky Central has also been secured.

Chicago, Milwaukee & St. Paul.—It is announced that Langdon & Co., of Minneapolis, have secured the contract for building the extension from Marion, Ia., to Council Bluffs, a distance of 207 miles. This line will run through the counties of Benton, Tamar, Polk, Dallas, Guthrie, Audubon, Shelby and Pottawatomie. The extension embraces a large amount of heavy work, making necessary the removal of about 5,000,000 cubic yards of earth, the use of 5,000,000 feet of lumber and 500,000 feet of piling, but it is hoped to complete the line from Marion to the Missouri at Council Bluffs before next fall. In addition to this long stretch of new road in Iowa, Messrs. Langdon & Co. will complete the unfinished portion of the Hasting & Dakota during the coming summer, making a stretch of 125 miles of completed road on that division of the St. Paul. They will also complete the 20 miles, the unfinished portion of the Iowa & Dakota division, to the Missouri River.

An Iowa correspondent gives the following description of the route of the Council Bluffs Extension, which may or may not be quite correct: "The route, as determined, runs from Marion due west to a point northeast of Toledo, when it deflects to that town; thence southwest, crossing the main line of the Northwestern two miles from Toledo; thence southwest, crossing the Central Iowa two miles south of Dillon; thence to the south part of Ellen Township, in Marshall County; thence due west 24 miles north crossing the Des Moines & Fort Dodge at or near Perry, in Dallas County. Toledo, therefore, is the only railroad town on the Iowa pool roads touched by the Milwaukee. The inference is very strong that it will become one of the pool when it gets to Omaha. By special agreement the pool do not build roads into the territory occupied or pre-empted by each other, neither do they compete at points where they meet."

Chicago & Northwestern.—Surveys are being made for an extension of the Menominee River Branch from Florence, Wis., to the Iron River district, about 20 miles.

Chicago & Northwestern and Chicago, Milwaukee & St. Paul Consolidation.—Reports continue to be circulated in New York of pending negotiations for a union of these two companies. The plan now under discussion, it is said, provides for the organization of a company to buy or lease and work both roads. It is very difficult to say whether there is any truth in these reports, or whether they are started merely to serve the purposes of stock speculators.

Cincinnati, Union & Northwestern.—This company has been organized to build a railroad from Carlisle, O., on the Cincinnati, Hamilton & Dayton, to Dodson, the junction of the Dayton & Union and the Dayton & Western lines. The distance is 22 miles. The object of the road is not very apparent, though it might be used as a short-cut to Cincinnati for business from a part of the Columbus, Chicago & Indiana Central.

Cleveland, Columbus, Cincinnati & Indianapolis.—Notice is given that 42 consolidated mortgage bonds have been drawn for redemption by the sinking fund, and that they will be paid June 1 at the office of Drexel, Morgan & Co., in New York, or J. S. Morgan & Co. in London, in pursuance of the provisions of the mortgage. The numbers drawn are 3577, 3801, 3827, 3958, 3985, 4144, 4238, 4231, 4353, 4407, 4419, 4588, 4756, 4761, 4802, 4884, 4905, 4922, 5011, 5067, 5149, 5219, 5412, 5439, 5476, 5507, 5587, 5624, 5746, 5758, 5775, 5811, 5859, 5981, 6012, 6166, 6194, 6292, 6342, 6349, 6500 and 6572. Interest on these bonds will cease from June 1 next.

Columbus & Atlanta.—Surveys are now being made for this projected line from Columbus, Miss., to Atlanta, Ga., of which Ex-Senator Gordon is the Manager. It will cross the coal and iron district of Alabama.

Corpus Christi, San Diego & Rio Grande.—Grading on this road is now completed for 28 miles westward from last year's terminus at Mesquite, leaving about 26 miles to be finished to reach Laredo. Track laying from Mesquite has begun.

Dahlonega.—The engineers have completed the location of the branch road which is to extend from the Atlanta

& Charlotte Air Line at Gainesville, Ga., to Dahlonoga. The distance is 25 miles. The two miles nearest Dahlonoga will be a pretty heavy grade.

Delaware Western.—The board of directors has been reorganized in the interest of the new owners. The Delaware Senate has passed another amendment to the charter, authorizing the construction of a branch line down the Peninsula parallel to the Delaware road. It is stated that the plan of using the road as part of a new line between Baltimore and Philadelphia has not been abandoned by any means.

Denver & New Orleans.—This company has closed a contract with a construction company for the building of the road from Denver, Col., to a connection with some of the roads now being built in Northwestern Texas. A contract for 50 miles of English rails has been placed.

East Tennessee, Virginia & Georgia.—Bids will be received at this company's office in Knoxville, Tenn., for the grading of 4½ miles on the extension of the Morristown Branch from Wolf Creek, Tenn., to the North Carolina line at Paint Rock; also for the masonry of two important bridges over the French Broad River. Plans, etc., can be seen at the office of Major R. C. McCalla, Constructing Engineer, in Knoxville.

General Passenger Agent Ogden is collecting information in regard to summer resorts on or near the line of the road, with the purpose of drawing public attention to the many advantages of East Tennessee for summer travelers.

Elizabeth City & Norfolk.—Work is progressing steadily on this road, and track has been laid from Norfolk, Va., southward seven miles, and from Elizabeth City, N. J., north five miles. There is a construction train at work at each end of the line.

Fond du Lac, Portage & Sturgeon Bay.—This company has filed articles of incorporation to build a railroad from a point on the Chicago & Northwestern in Sauk County, Wis., by Portage City and Fond du Lac to Sturgeon Bay in Door County, about 150 miles.

Gulf, Colorado & Santa Fe.—Grading on the extension of this road is now completed for 30 miles north of the present terminus at Belton, Tex. Contracts have been let for all the grading from Belton to the Brazos River, and for the masonry of the Brazos and Noland bridges.

Hartford & Connecticut Valley.—The bill authorizing this company to extend its road from Hartford, Conn., north to Holyoke, Mass., has been defeated in the Connecticut Senate, but has been brought up again in the House.

Huntingdon & Broad Top Mountain.—Notice is given that at a meeting of the board of directors held March 28 it was resolved to fund all overdue coupons on the consolidated bonds of this company up to and including April 1, 1881, and to resume payment of interest on the said bonds from that date, at the rate of 5 per cent. per annum.

Indiana, Bloomington & Western.—The corporation which is to build the extension from Indianapolis to Springfield, O., has been formally consolidated with this company. The capital stock of the consolidated company is fixed at \$10,000,000.

Kentucky Central.—It is reported that negotiations are in progress for the sale of the controlling interest in this road, lately bought by a Cincinnati syndicate, to C. P. Huntington and others in the interest of the Chesapeake & Ohio road. It would be of value to that company as giving it a connection to Cincinnati from its Louisville line, and also, if the proposed extension is built, a line to Knoxville.

Later dispatches state that the negotiations have resulted, not in a transfer of the road, but in a close alliance with the Chesapeake & Ohio, which will give that road the use of the Central tracks to Cincinnati as soon as its own line reaches Lexington.

Knoxville & Ohio.—Sealed proposals will be received until April 18 at noon, at the office of this company in Knoxville, Tenn., for the grading, masonry and ballast on the extension of this road from Careyville, Tenn., to the Kentucky state line. The distance is 27 miles, crossing the entire range of the Cumberland Mountains, and presenting a great variety of work. Bids will also be received for ties for 12 miles, from Careyville to Elk Gap. Plans and specifications can be seen at the office of Major R. C. McCalla, Constructing Engineer, in Knoxville.

Lebanon Springs.—The Receiver of this road has given notice that he will apply to the Supreme Court at Kingston, N. Y., on April 2, for authority to issue \$300,000 receiver's certificates. An effort is being made to unite the bondholders in opposition.

Louisville & Nashville.—This company has advertised for bids for work on the extension of the Knoxville Branch from Livingston, Ky., to the Tennessee line. Proposals are to be received until April 18 next.

Macon & Brunswick.—The preliminary survey for the extension from Macon, Ga., to Atlanta has been completed, and the maps and estimates are now being prepared. Starting from Macon, the line surveyed is by way of Walnut Creek, Finney, Round Oak, Hillsboro, Winifred, Key's Ferry on the Ocmulgee, Worthville, Sandy Ridge and Cedar Grove to Atlanta. The distance is 101 miles. The right of way has been offered free of cost in many places by owners of land along the line.

Maine Central.—At the annual meeting last week the stockholders voted to amend the by-laws so as to fix the time of the annual meeting on the third Wednesday in December, instead of March as heretofore.

Meadville.—The contract for laying the track on this road from Meadville, Pa., to the Erie & Pittsburgh at Linesville has been let to O'Connor & Co. The first lot of iron for the road has been received.

Mexican Railroads.—A correspondent of the New York World writing from the city of Mexico, March 1st, says: "As regards the progress of the Central Railroad Company (represented by Mr. Robert Symon) in Sonora and the western portions of this country, you have no doubt ample reports via San Francisco, therefore I confine myself to a few items respecting their operations in this vicinity. The company has now at work between Mexico City and Tula nearly 10,000 men, and between Tula and Antonio 900. At the ravine of Huehuetoca they have erected an iron bridge twelve metres high. The barrancas at Prieta and Guadalupe are also spanned by bridges of the same material. Trains have passed over and fully tested these bridges, and the road is fully completed to a distance of 85 kilometres from this capital. Work on the San Andres section for a distance of 24 kilometres is almost finished. A large force of laborers are now engaged widening the track through the cut of Nocuistongo. On the section between Mexico City and Querétaro the engineers are advancing at a marvelous rate. The line between Tenjay and Corro Prieto is now definitely located. Some alterations of the

former surveys have been recently made for the purpose of reducing grades.

The Toluca road is progressing rapidly. The Palmer-Sullivan Company have 8,000 men at work between this city and Toluca, and they also commenced laying track from Zacatecas toward San Luis Potosi last week. The Michoacan section is advancing; loads of material are daily despatched to Morelia for it. Mr. Maurice Kingsley, son of the Rev. Canon Kingsley, is in charge of the Morelia Division."

Michigan Central.—The following official notice is dated Detroit, Mich., March 25: "The Michigan Central Railroad Company having leased the Detroit & Bay City Railroad, on and after April 1, 1881, that property will be known and operated as the Bay City Division of the Michigan Central Railroad."

"Accordingly, all reports for foreign roads, for the sale of tickets over the Bay City Division, and for the mileage of Bay City cars, should be included in the reports to this company."

The road was lately sold under foreclosure and bought by Mr. Vanderbilt. It has always been worked in the interests of this company. It extends from Detroit to Bay City, 110 miles, with branches to Five Lakes, Caro and Saginaw, making 148 miles in all.

Milwaukee, Lake Shore & Western.—People of Kewaunee and Door counties in Wisconsin have offered this company \$50,000 in aid of an extension of the Two Rivers Branch north to Sturgeon Bay, passing through Ahnapee and Kewaunee. This is the third project now under consideration for a railroad through the peninsula between Green Bay and Lake Michigan.

New Bonds.—New issues of bonds have been put upon the market as follows:

The *Danville, Olney & Ohio River* offers, through R. M. Raven & Co., of New York, \$500,000 of its 7 per cent. first-mortgage bonds; total issue fixed at \$801,000. The bonds are offered at par, a bonus of \$500 stock to be given with each \$1,000 bond. The road is in operation from Kansas, Ill., south to West Liberty, 49 miles; 51 miles more are to be built. Ten miles of it were built in 1878 and the rest late last year. It is a narrow-gauge road.

New Brighton & New Castle.—This company has been organized to build a railroad from New Brighton, in Beaver County, Pa., to New Castle, in Lawrence County, a distance of 21 miles. The directors are all connected with the Pennsylvania Company. The line is parallel to that of the New Castle & Beaver Valley road, now leased by that company.

New York Central & Hudson River.—The contract for a new depot at Exchange street, Buffalo, to replace the one which fell down recently, has been awarded to John Briggs, of Buffalo, at his bid of \$38,382. The new depot will be an extension of the arch which was finished last year, and will be similar to it in point of construction in all essential particulars. It will be 460 feet long and 120 feet wide. The entire length of the proposed and present arch will be about 758 feet, making it one of the longest stations in the country. The roof will be made by Wasson & Martin, of Albany.

New York & Greenwood Lake.—This company will begin on April 11 to run trains over the Watchburg Railroad, a branch 4½ miles long from Woodside, N. J., to Orange. It was built in 1873, but worked only a few months, and has now been thoroughly repaired and almost rebuilt.

New York & New England.—The Boston Herald of March 29 says: "A good deal has been printed during the last few weeks relative to the establishment of quick-transit trains on the New York & New England Railroad, but it was not until yesterday that the order was given which takes the question out of the sphere of conjecture into the realm of the actual. On Friday next, April 1, the fare to stations between Boston and Dorchester and between intermediate stations will be five cents. Engraved detachable package tickets, similar to horse-car tickets, will be sold for 25 cents, good for five rides. These tickets will bear the following words: 'Quick transit. New York & New England Railroad. Boston and Dorchester, or between intermediate stations.' The present rates to the stations affected by the reduction are as follows: Dudley street, 6½ cents; Bird street, 7 cents; Mt. Bowdoin, 7½ cents; Harvard street, 8 cents; Dorchester, 9 cents. The package-ticket fare to Mattapan, now 11 cents, will be reduced to 10 cents. The season-ticket rate, \$12, will remain intact. No season tickets will be sold to stations between Boston and Dorchester, the 5-cent rates rendering them unnecessary. The management of the road desires to have it understood that the new departure is largely experimental. It gives to the public ample accommodation in the way of frequent trains—there being 22 each way between Boston and Hyde Park—with horse-car fares as far out as the horse-cars run; and it is for the public to say whether the new arrangement shall be permanent. If the management finds that its efforts to meet the wants of its passengers are appreciated by generous patronage, the 5-cent fare will be a permanent thing; should it be found, after thorough trial, that the quick-transit trains are run at a loss, the old rates of fare might, and probably would be restored. The fare to stations beyond Mattapan will not be changed. The rate to Hyde Park is already lower than is charged by other roads for the same distance—\$12 a quarter, package tickets eight for \$1—and the new arrangement is only intended to cover what may be called the horse-car district."

Work has been begun on the large docks and ferry landing at Fishkill Landing, N. Y., which is to be the Hudson River terminus.

A dispatch from Boston, March 30, says: "In the United States District Court a hearing was had to-day on the motion of the stockholders to revive the matter of the former adjudication of bankruptcy of the Boston, Hartford & Erie Railroad on the ground of fraud, in the fact that the bankruptcy proceedings were got by consent, and that the Court was deceived or misled into its previous decision. The Court allowed the petition, together with several other petitions tending to open and revive the whole subject of the misfortunes of the Boston, Hartford & Erie Railroad."

New York, Providence & Boston.—At a special meeting in Providence, March 27, the stockholders voted to authorize an issue of \$500,000 new bonds secured by a mortgage on the road from Stonington to New London. The bonds are to be used to pay for completion of the second track, steel rails, ferry improvements at Groton, and other improvements.

Northern Pacific.—On March 25 counsel for Mr. Henry Villard, as a stockholder of the company, made application to the New York Supreme Court for an injunction to restrain this company from making the proposed issue of \$18,000,000 common stock. The complaint rehearses the history of the company and charges that the issue will be of great detriment to the interests of the other stockholders. The Court granted the usual preliminary injunction, with an order returnable March 31 to the company to show cause why the injunction should not be made permanent.

A meeting of the board was held March 26, at which it was resolved to contest this suit.

President Billings claims that there has been no new issue of stock. All the common stock was regularly issued and listed on the Stock Exchange, the \$18,000,000 in question being held in trust by the company for the parties entitled to it, and who have now received it.

Pennsylvania Coal Co.—Notice is given that the mortgage bonds of this company, which will mature Aug. 1 next, will be paid at the office of the company in New York, and that interest will cease from date of maturity. If holders desire, the company is prepared to pay the bonds at any time prior to maturity, with interest accrued to date of payment. The amount of these bonds is \$472,500, and they are the only funded debt of the company.

Philadelphia & Reading.—The Receivers have published a monthly statement (the first since October last) for February and the three months of the fiscal year from Dec. 1 to Feb. 28:

| Railroad Co. | February, 1881. | February, 1880. | Three months, 1881. | Three months, 1880. |
|--------------------------|-----------------|-----------------|---------------------|---------------------|
| Gross receipts.. | \$1,336,427 | \$1,085,102 | \$4,000,591 | \$3,975,318 |
| Gross expenses.. | 805,106 | 687,274 | 2,458,036 | 2,248,720 |
| Net profit..... | \$531,321 | \$397,828 | \$1,550,555 | \$1,729,698 |
| Coal & Iron Co. | | | | |
| Gross receipts.. | 803,626 | 536,472 | 2,520,886 | 1,926,806 |
| Gross expenses.. | 703,545 | 609,559 | 2,344,912 | 2,187,051 |
| Net profit..... | \$100,081 | \$76,913 | \$175,974 | \$79,755 |
| Total net, both Cos..... | \$631,402 | \$474,741 | \$1,726,529 | \$2,006,453 |

* Loss.

Gross expenses include taxes and rentals. The net profit of the Railroad Company shows a gain of 34 per cent. for the month and a decrease of 10 per cent. for the three months. The net profit of both companies shows a gain of 98 per cent. for the month and 17½ per cent. for the quarter.

The supplementary report of Master George M. Dallas to the Court shows that the total stock registered March 14 is 687,663 shares, of which 44,218 were on the Philadelphia book as brokers, and 92,155 as American; 13,214 New York old and 173,422 new; 247,883 foreign and 85,721 foreign brokers', and 66 fractional shares; total, 656,627, and \$1,036 preferred, making 687,663. This includes the \$105,000 bonds converted last January into 2,100 shares of common stock.

Pullman Palace Car Co.—A special meeting of the stockholders of this company has been called for April 2 at Chicago, to act on the proposed increase of the capital stock. The directors will ask for authority to increase the capital stock by one third, and for this new stock the stockholders will be given the privilege of subscribing at par. The purpose of the increase is to complete the improvements of the car works recently established at Hyde Park, near Chicago, on which there has been already expended about \$1,350,000.

Notice is given that the outstanding 8 per cent. debenture bonds, second series, will be paid, with the last coupon, on presentation to the Farmers' Loan and Trust Company in New York on May 14 next. Interest will cease from May 15, which is the date when the bonds mature. The original issue of these bonds was \$1,000,000; by the latest report, there were \$328,000 outstanding.

Quincy, Jerseyville & St. Louis.—This company has filed articles of incorporation in Illinois to build a railroad from Rockport, Pike County, southeast to the boundary line of Macomb County, a distance of about 50 miles.

St. Louis, Hannibal & Keokuk.—This company, whose road now extends from Hannibal, Mo., south by east to Prairieville, 49 miles, has secured the right of way for an extension from Prairieville south to Peruque on the Wabash, St. Louis & Pacific, a distance of 38 miles. The iron has been bought and contracts have been let for the grading. The course of the road from Hannibal to Peruque is generally parallel with the Mississippi, but 15 to 20 miles back from the river.

Shenandoah Valley.—The gap between the northern and southern ends of this road was closed on March 28, the last rail being laid on that day near Luray, Va. The road is now nearly all ballasted, and through trains from Hagerstown, Md., to the Chesapeake & Ohio at Waynesboro, Va., 143 miles, begin to run about April 15.

Work is to be prosecuted vigorously on the extension from Waynesboro to the Atlantic, Mississippi & Ohio road, about 90 miles.

Springfield Southern.—It is reported that this road has been sold to a syndicate in the interest of the Indiana, Bloomington & Western. This road was originally the Springfield, Jackson & Pomeroy, and was of 3 ft. gauge, but was sold under foreclosure and passed to the present company, which changed it to standard gauge. It now extends from Springfield, O., to Jackson, 118 miles. The new owners, it is said, will increase the stock to \$3,840,000, and will issue \$1,920,000 first-mortgage and \$1,920,000 income bonds, and will extend the road to the Ohio River and a connection with the Chesapeake & Ohio.

Stillwater, Hastings & Rochester.—This company has been organized to build a railroad from Stillwater, Minn., south to Hastings, and thence south by east to Rochester, about 75 miles.

Union Pacific.—This road suffered severe damage from a great flood in the Platte Valley in Nebraska last week, which caused several very bad wash-outs near Fremont. The continued high water has prevented repairs, and as the Burlington & Missouri River road has also been damaged by the flood, it has been necessary to run through trains by the long, circuitous route by way of St. Joseph and the St. Joseph & Western road. The extent of the damage can hardly be told until the flood subsides.

Union Railroad, Transfer & Stock Yards Co.—This company has changed its name to the Belt Railroad Company. The company's road extends around Indianapolis, connecting the roads entering that city, and has always been known locally as the Belt road, and it now wisely conforms to popular usage and drops the clumsy official title which no one ever used.

Vicksburg, Shreveport & Pacific.—Dispatches from Shreveport, La., state that an agreement has been concluded for the sale of this road to the Texas Pacific, and the immediate building of the extension from Monroe to Shreveport.

Wabash, St. Louis & Pacific.—This company gives notice that it will issue 7,600 shares preferred stock, 7,600 shares common stock and \$2,250,000 new bonds for the purpose of taking up the outstanding securities of the Missouri, Iowa & Nebraska road, which are \$2,490,000 stock and \$3,025,000 bonds.